FIG. 1

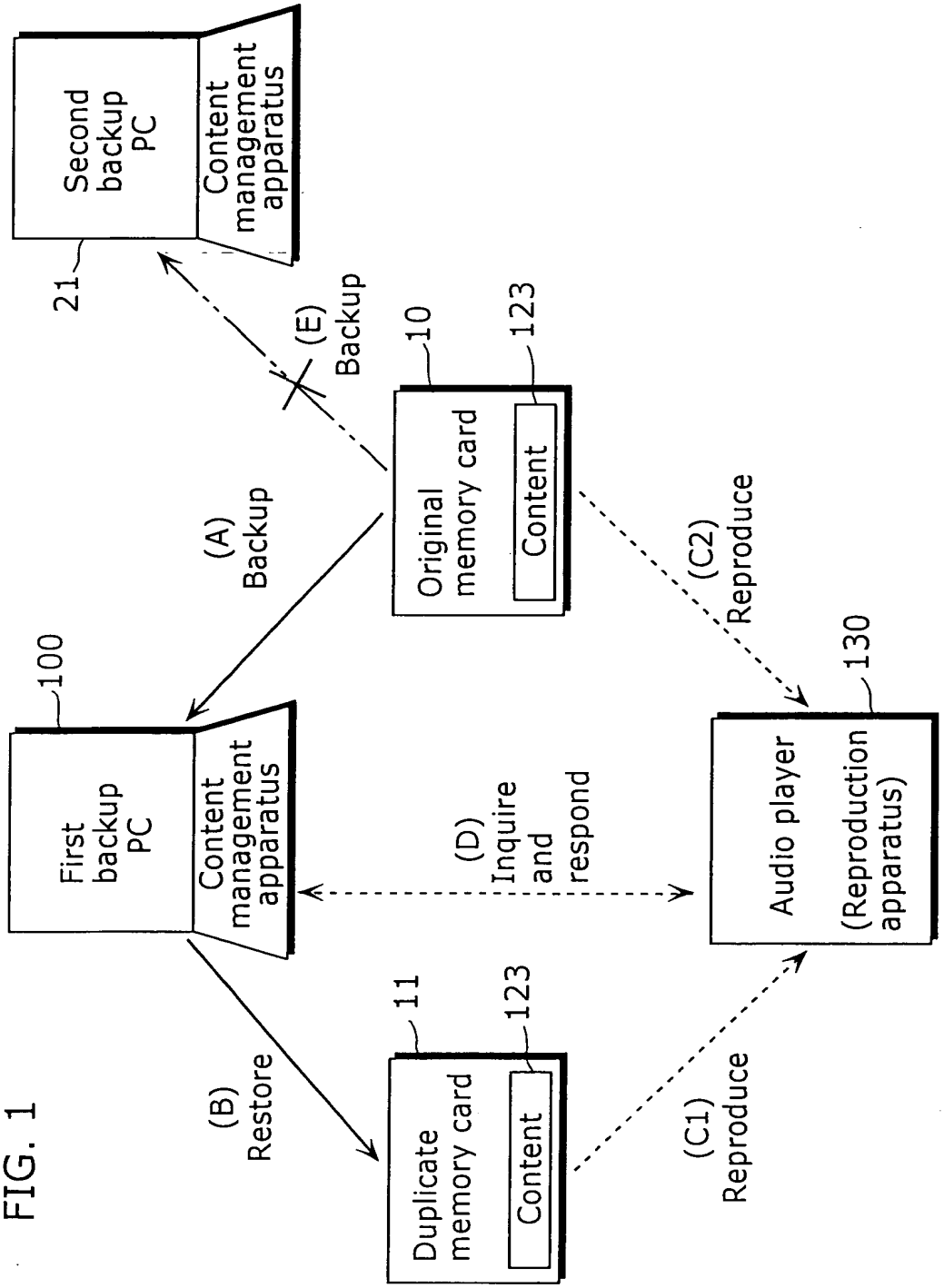

Second backup PC
Content management apparatus
21
(E) Backup
10
123
Original memory card
Content
(A) Backup
(C2) Reproduce
100
First backup PC
Content management apparatus
(D) Inquire and respond
130
Audio player
(Reproduction apparatus)
11
123
Duplicate memory card
Content
(B) Restore
(C1) Reproduce

FIG. 2

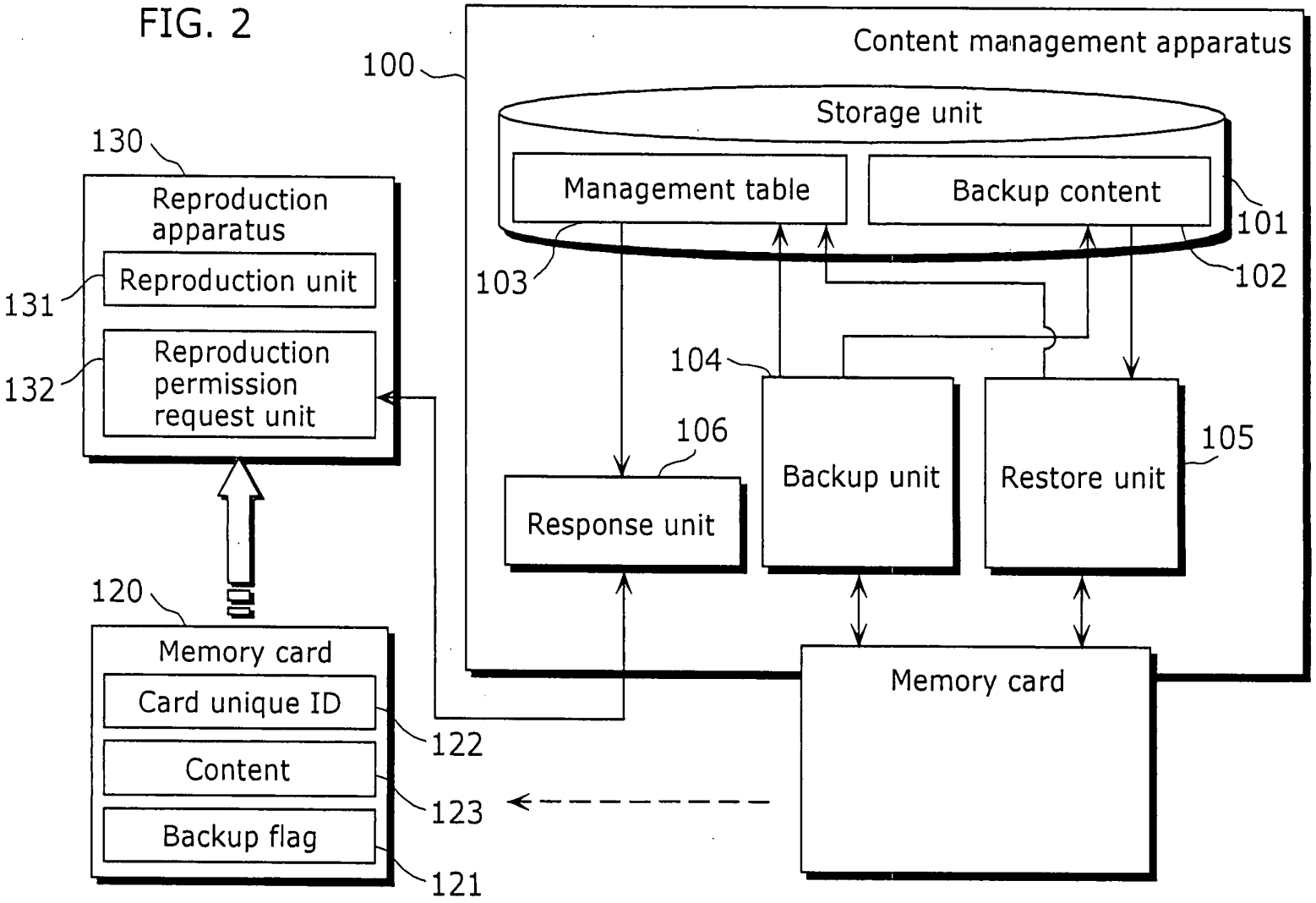

Content management apparatus
100
Storage unit
Management table
Backup content
101
102
103
130
Reproduction apparatus
Reproduction unit
131
Reproduction permission request unit
132
104
106
105
Backup unit
Restore unit
Response unit
120
Memory card
Card unique ID
122
Content
123
Backup flag
121
Memory card

FIG. 3

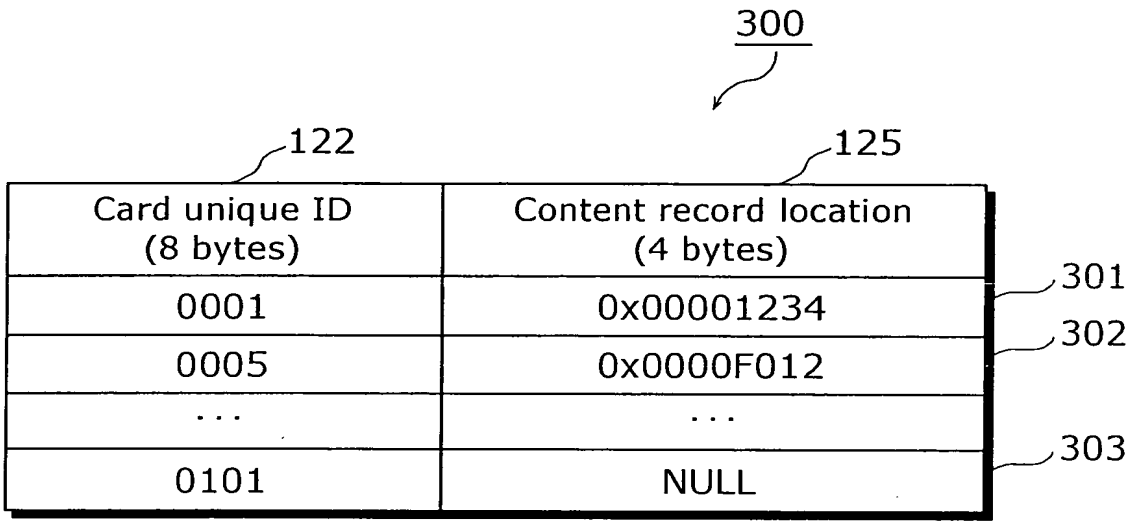

300
122
125
Card unique ID (8 bytes)
Content record location (4 bytes)
0001
0x00001234
0005
0x0000F012
...
...
0101
NULL
301
302
303

FIG. 4

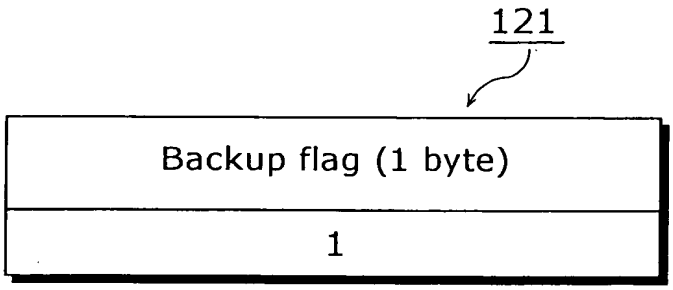

121
Backup flag (1 byte)
1

FIG. 5

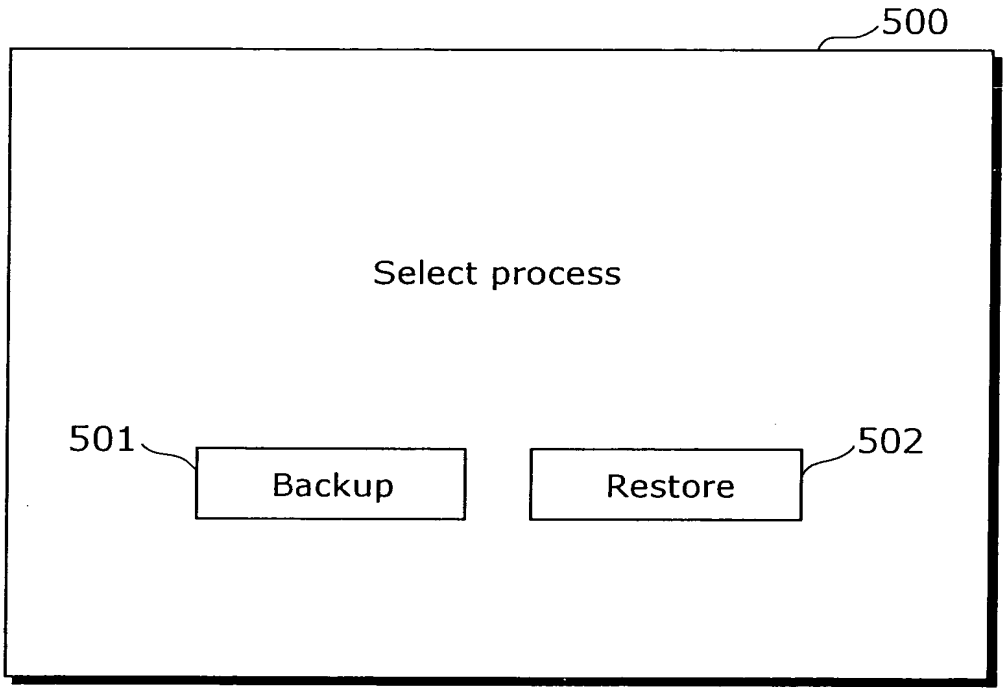


FIG. 6

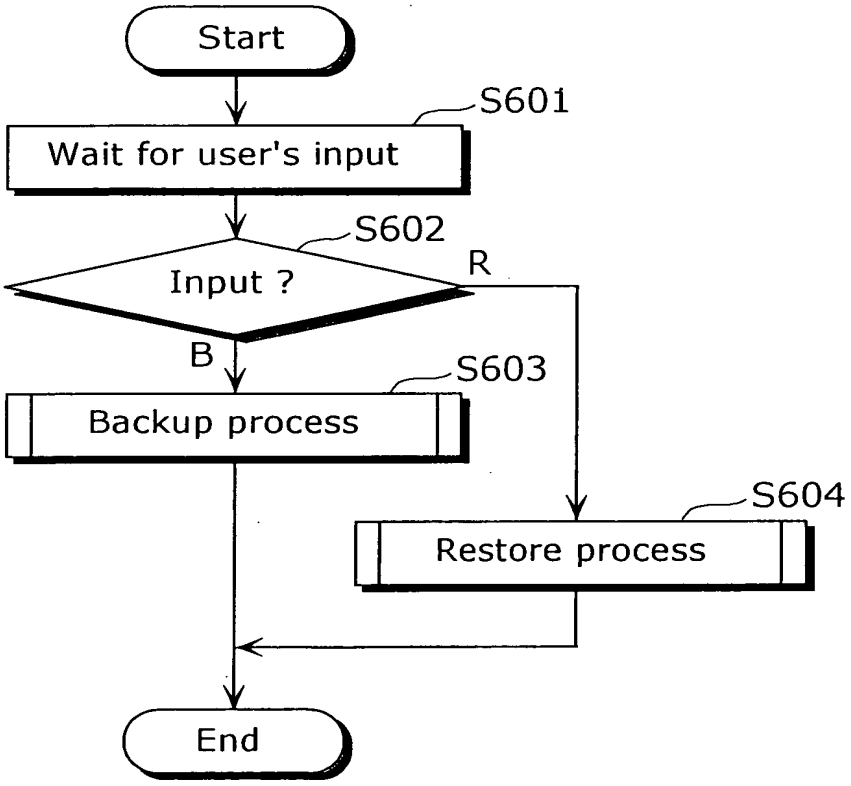

Start
S601
Wait for user's input
S602
Input ?
R
B
S603
Backup process
S604
Restore process
End

FIG. 7

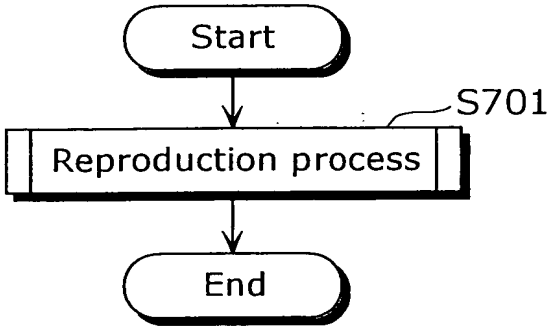

Start
S701
Reproduction process
End

FIG. 8

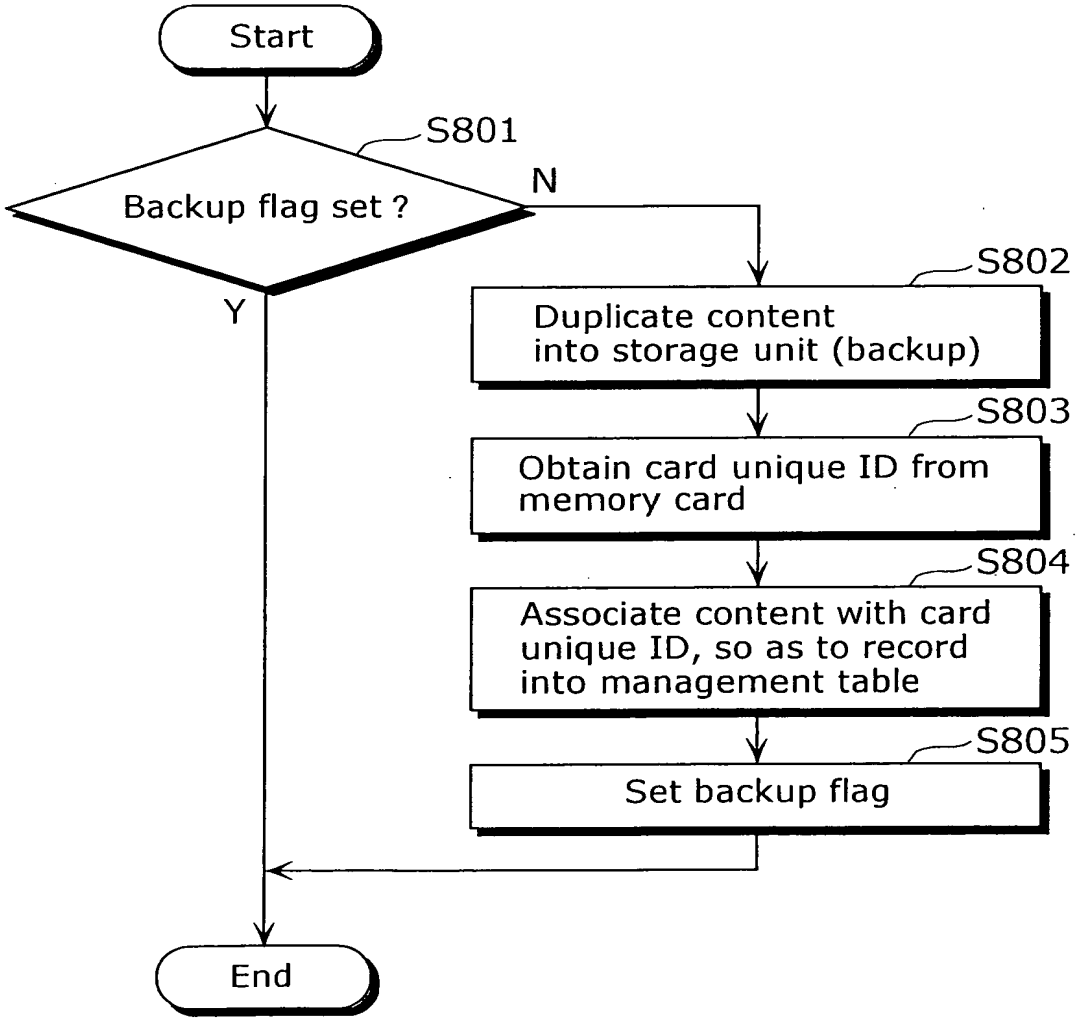

Start
S801
Backup flag set ?
N
Y
S802
Duplicate content into storage unit (backup)
S803
Obtain card unique ID from memory card
S804
Associate content with card unique ID, so as to record into management table
S805
Set backup flag
End

FIG. 9

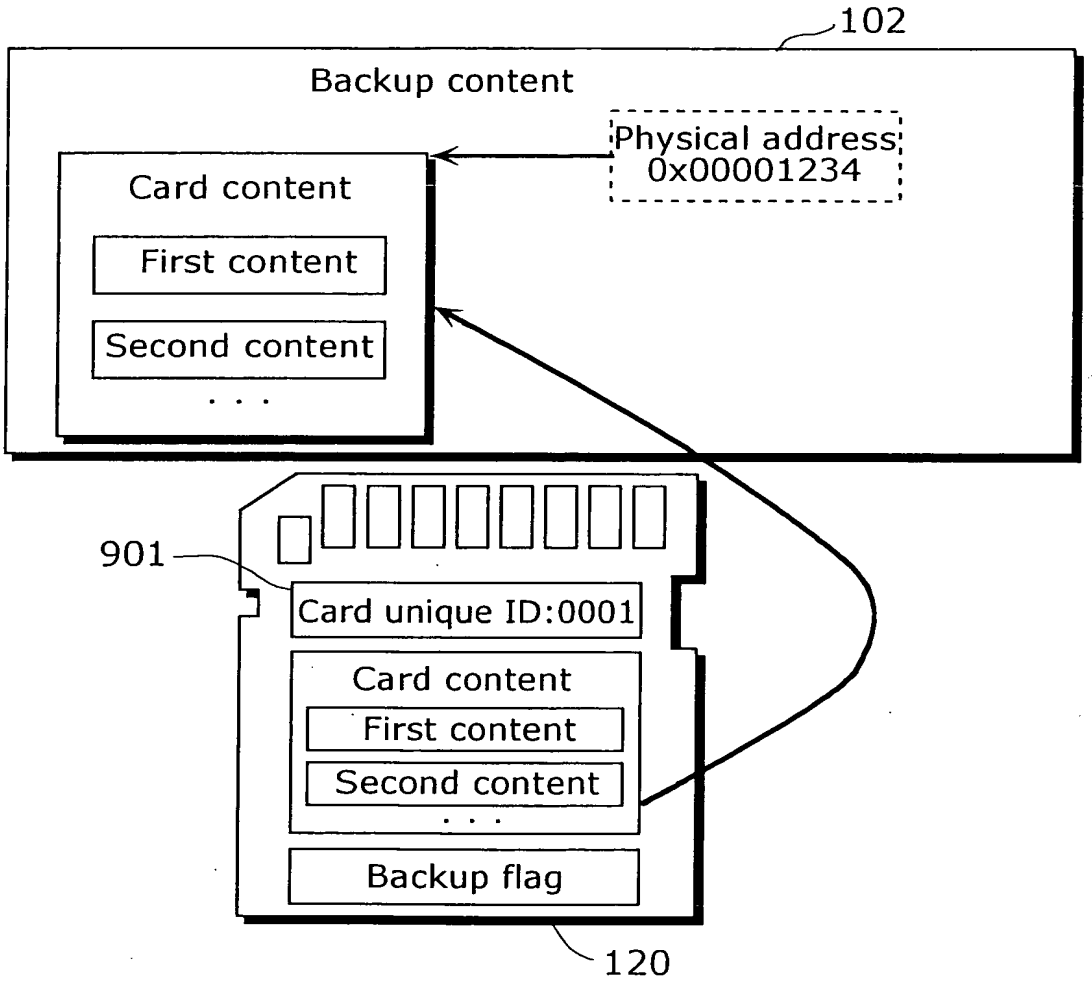

102
Backup content
Physical address
0x00001234
Card content
First content
Second content
. . .
901
Card unique ID:0001
Card content
First content
Second content
. . .
Backup flag
120

FIG. 10

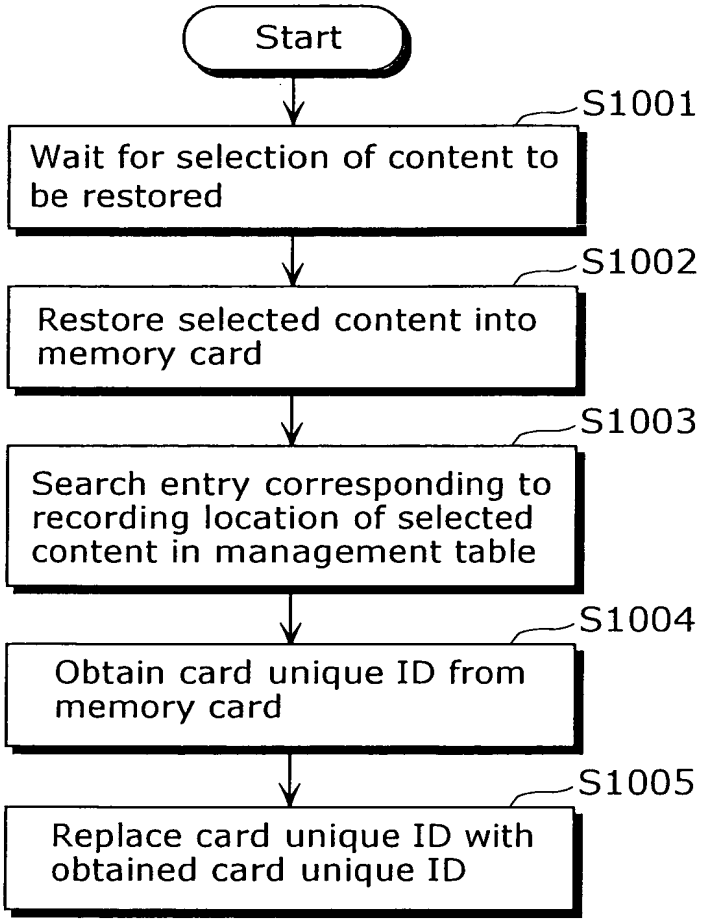

Start
S1001
Wait for selection of content to be restored
S1002
Restore selected content into memory card
S1003
Search entry corresponding to recording location of selected content in management table
S1004
Obtain card unique ID from memory card
S1005
Replace card unique ID with obtained card unique ID

FIG. 11

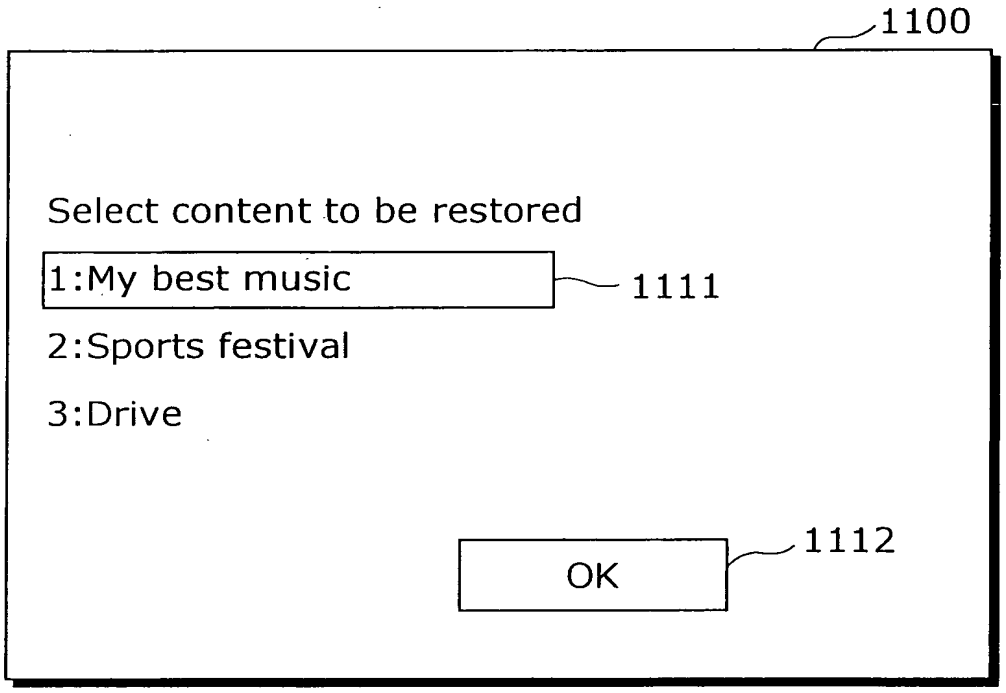

1100
Select content to be restored
1:My best music
1111
2:Sports festival
3:Drive
OK
1112

FIG. 12A

Card unique ID	Card content recording location
...	...
0001	0x00001234
...	...

1201

FIG. 12B

Card unique ID	Card content recording location
...	...
0005	0x00001234
...	...

1201

FIG. 13

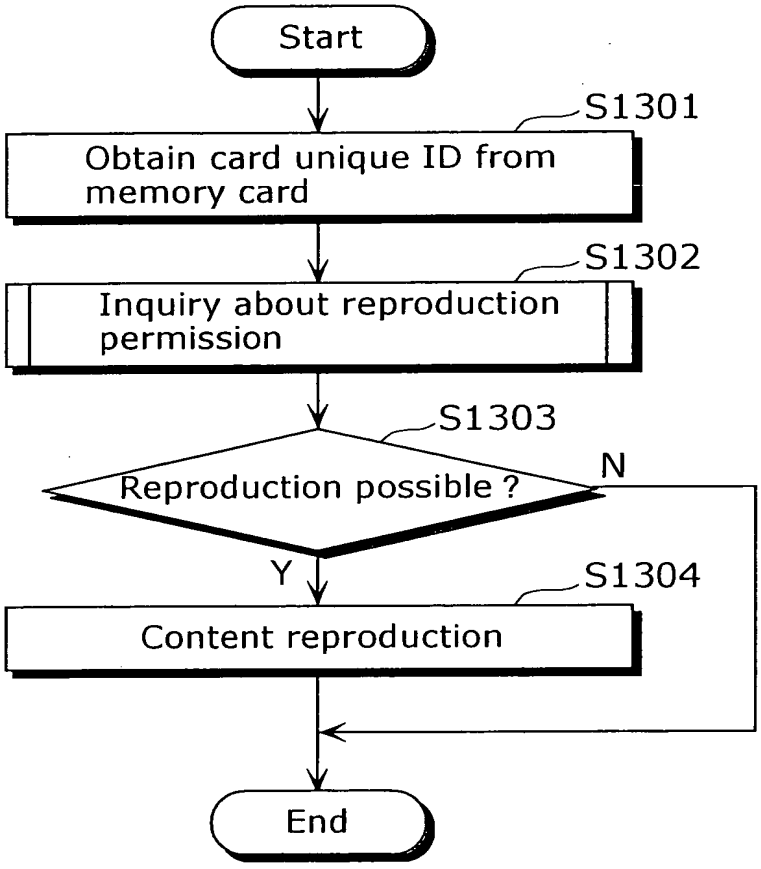

Start
S1301
Obtain card unique ID from memory card
S1302
Inquiry about reproduction permission
S1303
Reproduction possible ?
N
Y
S1304
Content reproduction
End

FIG. 14

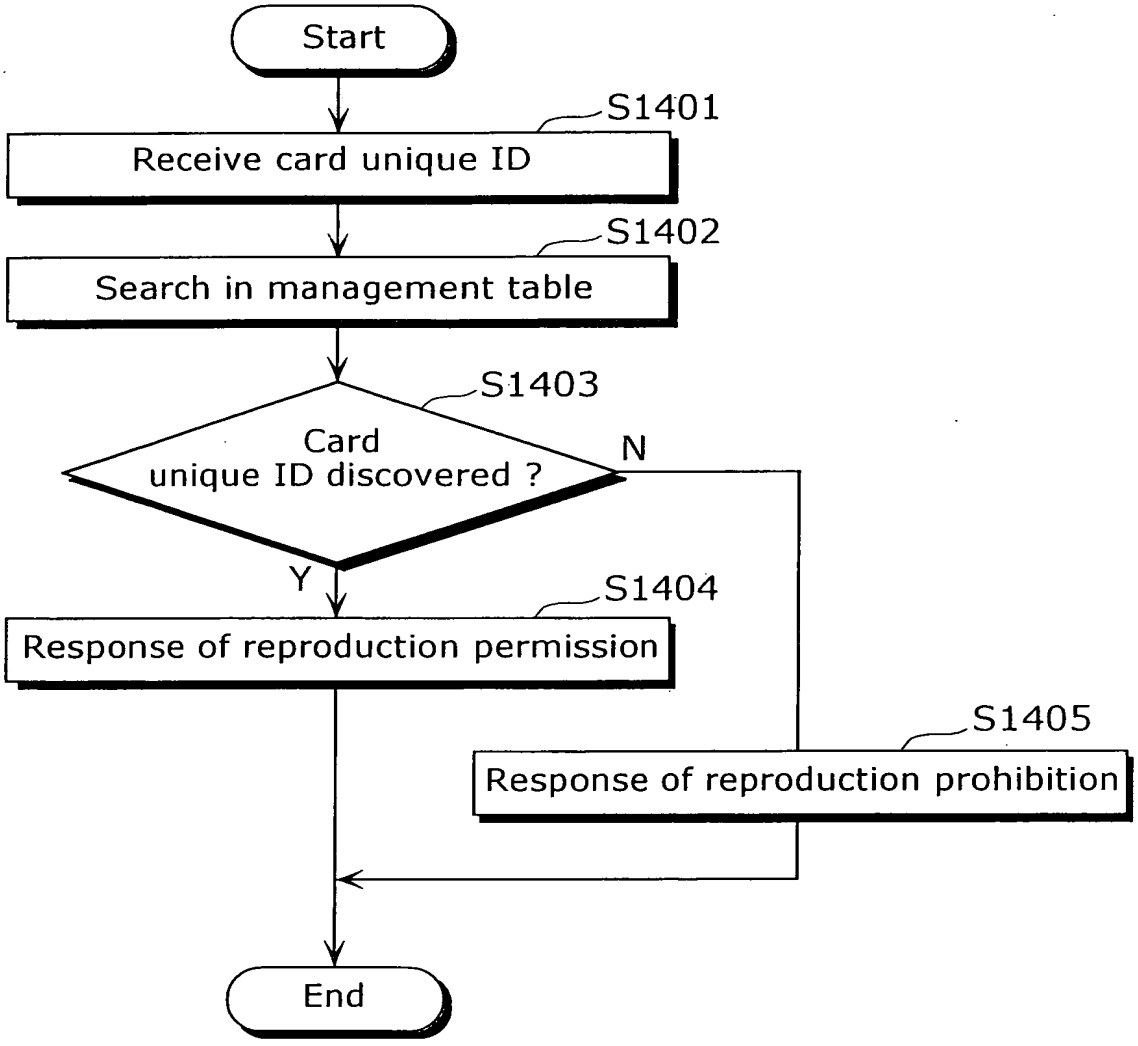

Start
S1401
Receive card unique ID
S1402
Search in management table
S1403
Card
unique ID discovered ?
N
Y
S1404
Response of reproduction permission
S1405
Response of reproduction prohibition
End

FIG. 15

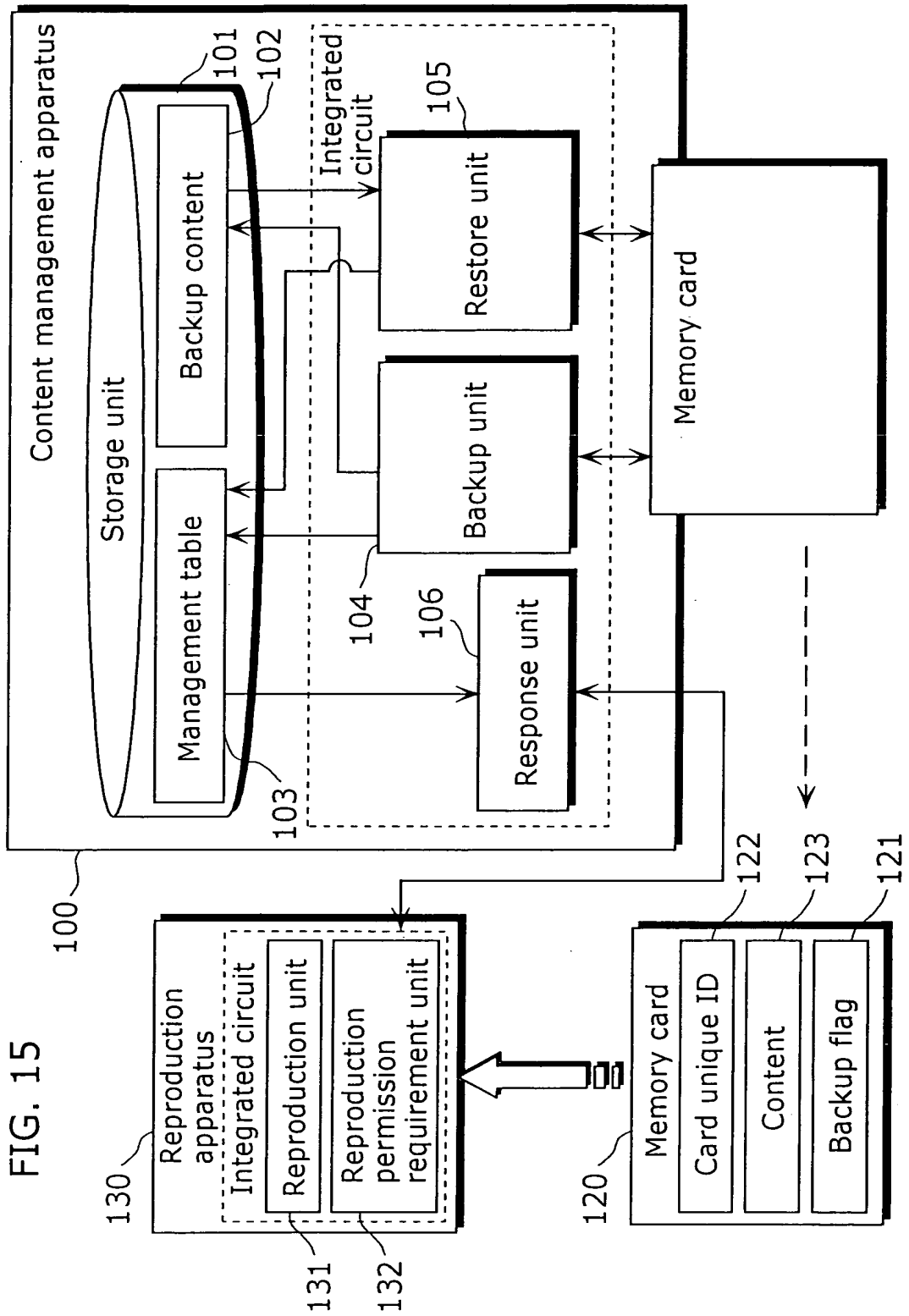

Content management apparatus
Storage unit
Backup content
Management table
Integrated circuit
Restore unit
Backup unit
Response unit
Memory card
101
102
103
104
105
106
100
Reproduction apparatus
Integrated circuit
Reproduction unit
Reproduction permission requirement unit
130
131
132
Memory card
Card unique ID
Content
Backup flag
120
121
122
123

FIG. 16

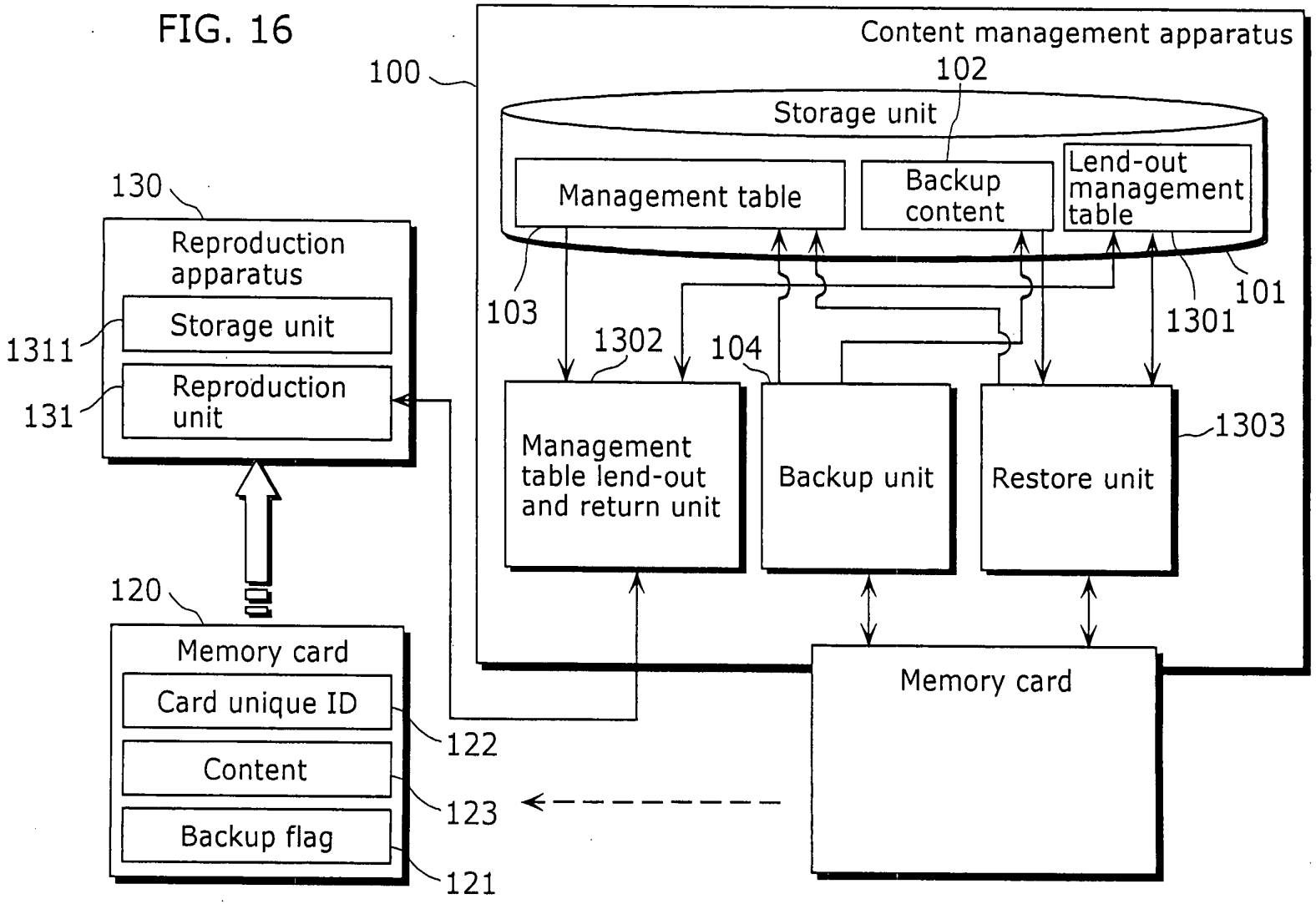

Content management apparatus
100
102
Storage unit
Management table
Backup content
Lend-out management table
101
103
1301
1302
104
1303
Management table lend-out and return unit
Backup unit
Restore unit
Memory card
130
Reproduction apparatus
Storage unit
1311
Reproduction unit
131
120
Memory card
Card unique ID
122
Content
123
Backup flag
121

FIG. 17

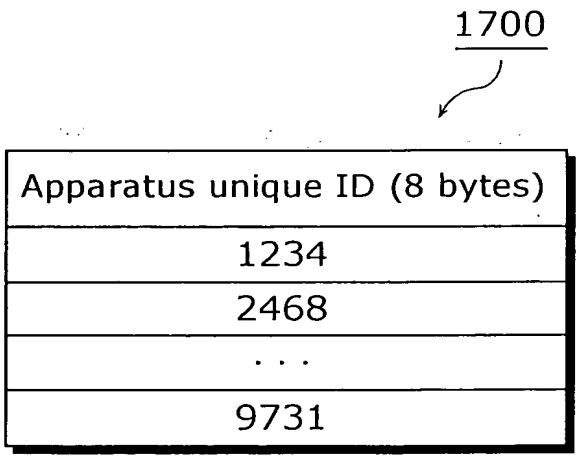


FIG. 18

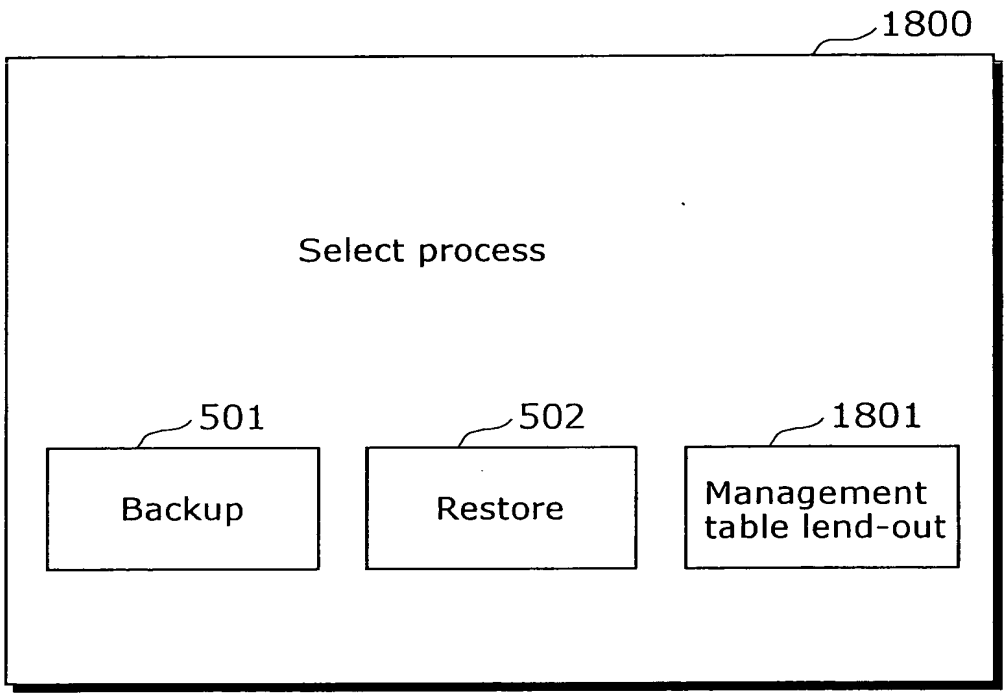

1800
Select process
501
Backup
502
Restore
1801
Management table lend-out

FIG. 19

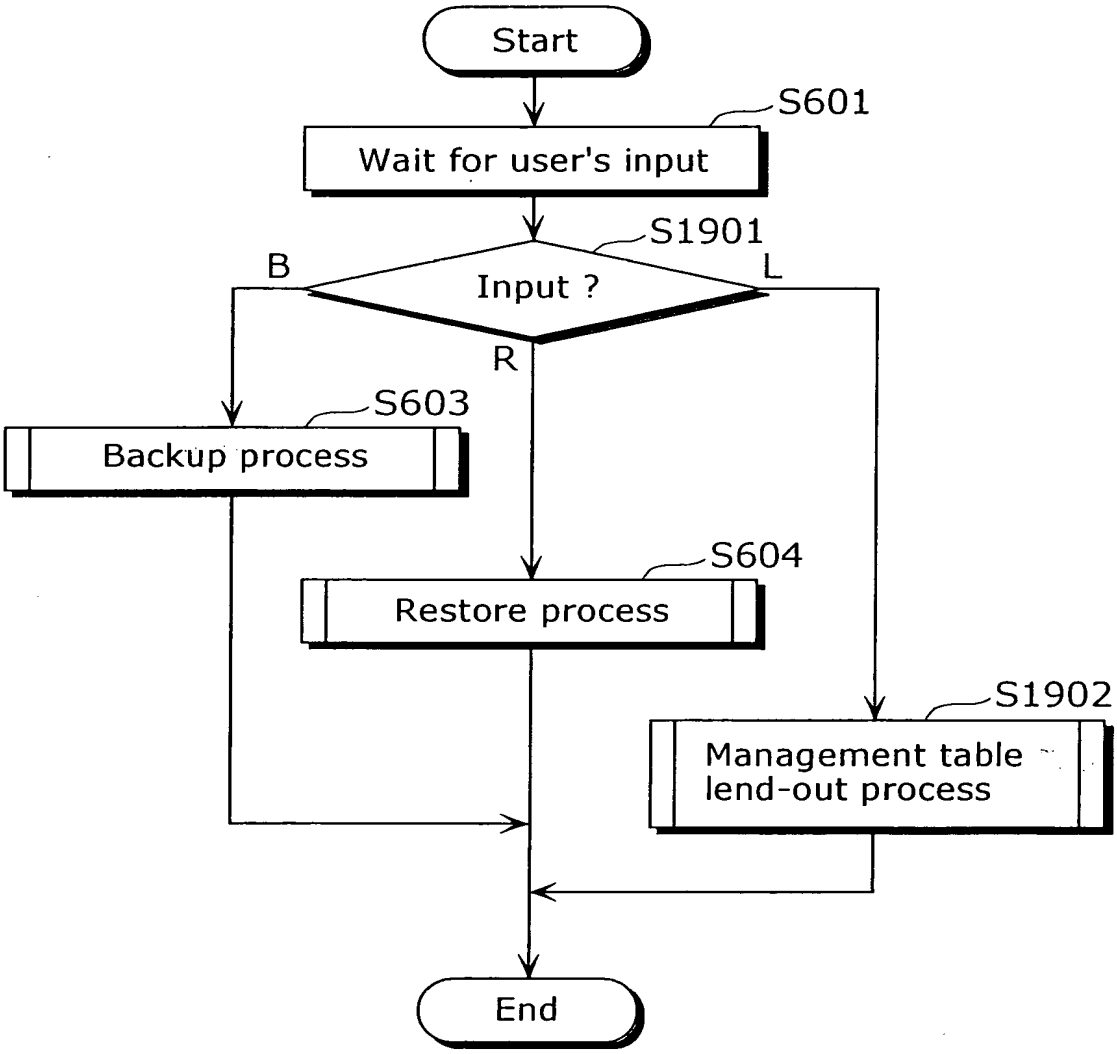

Start
S601
Wait for user's input
S1901
B
Input ?
L
R
S603
Backup process
S604
Restore process
S1902
Management table lend-out process
End

FIG. 20

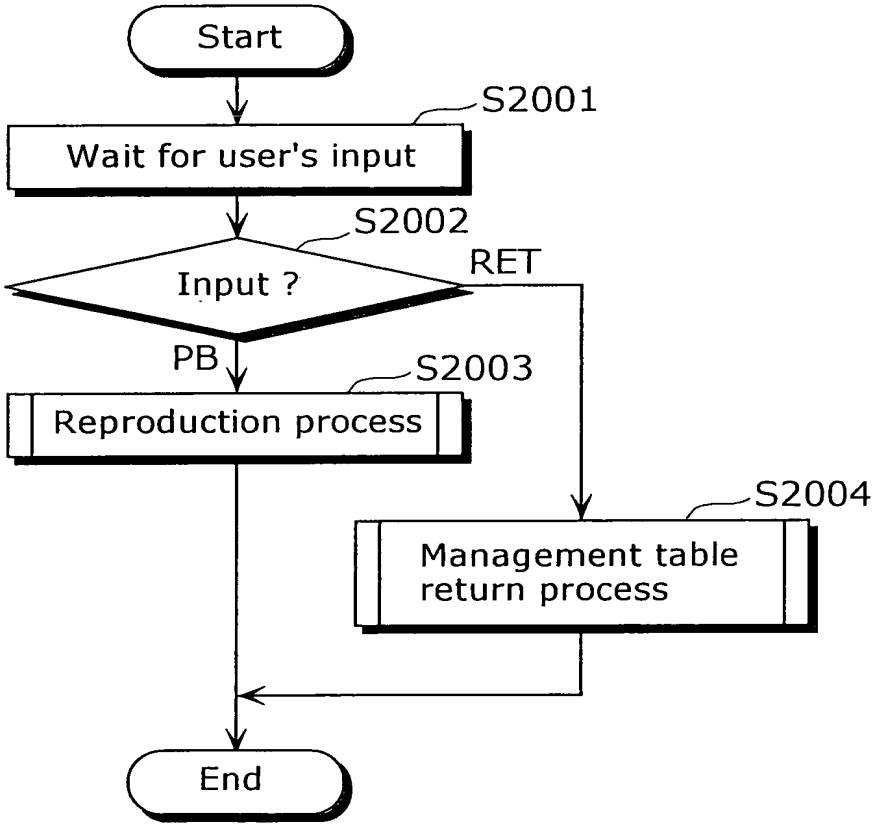

Start
S2001
Wait for user's input
S2002
Input ?
RET
PB
S2003
Reproduction process
S2004
Management table return process
End

FIG. 21

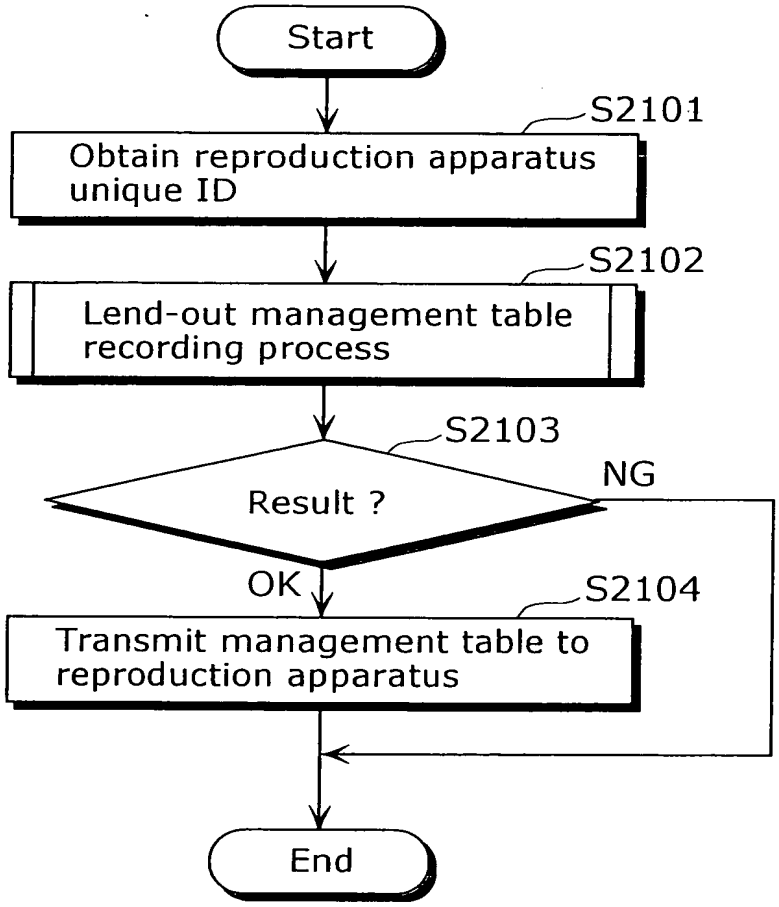

Start
S2101
Obtain reproduction apparatus unique ID
S2102
Lend-out management table recording process
S2103
Result ?
NG
OK
S2104
Transmit management table to reproduction apparatus
End

FIG. 22

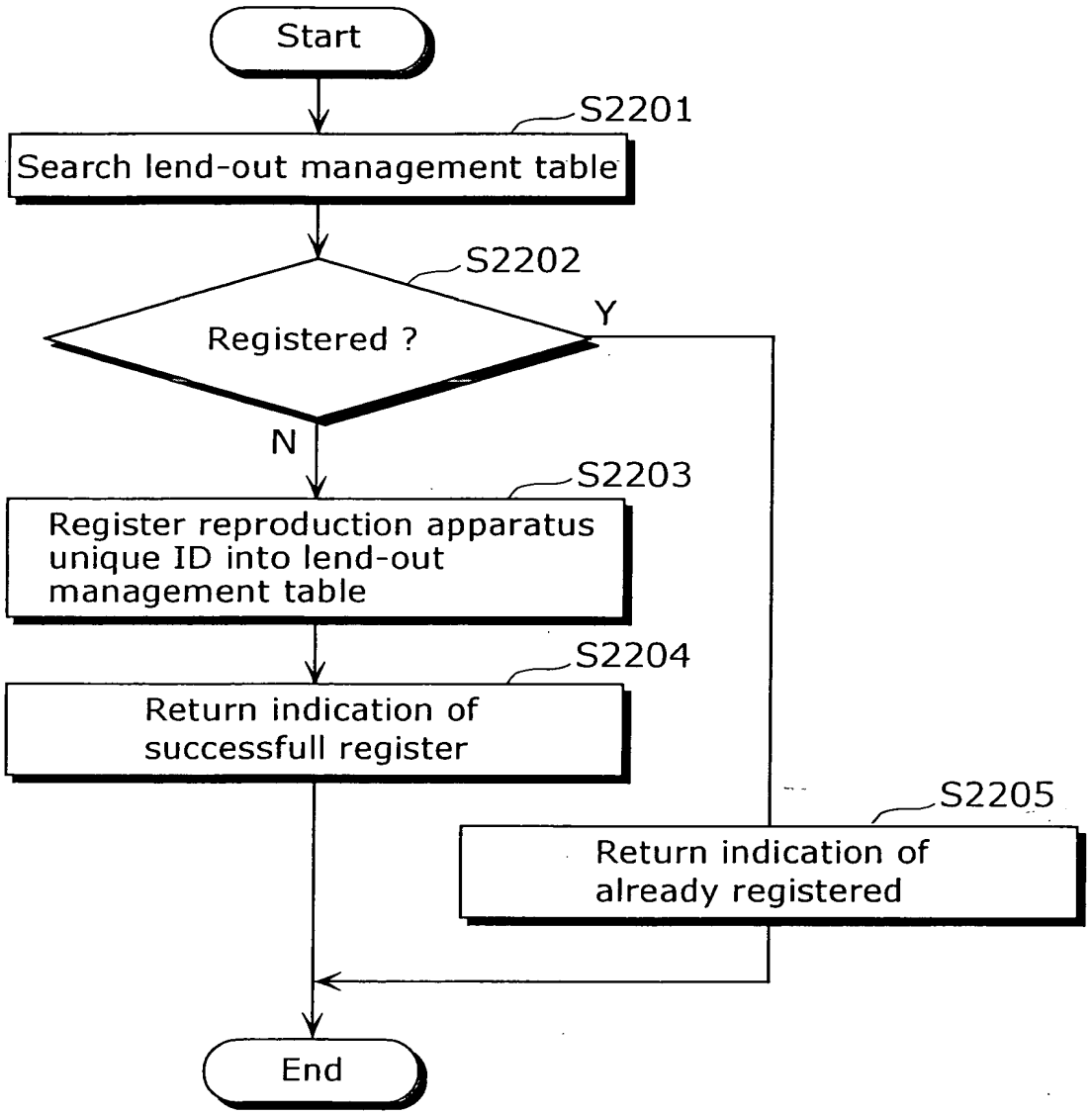

Start
S2201
Search lend-out management table
S2202
Registered ?
Y
N
S2203
Register reproduction apparatus unique ID into lend-out management table
S2204
Return indication of successfull register
S2205
Return indication of already registered
End

FIG. 23

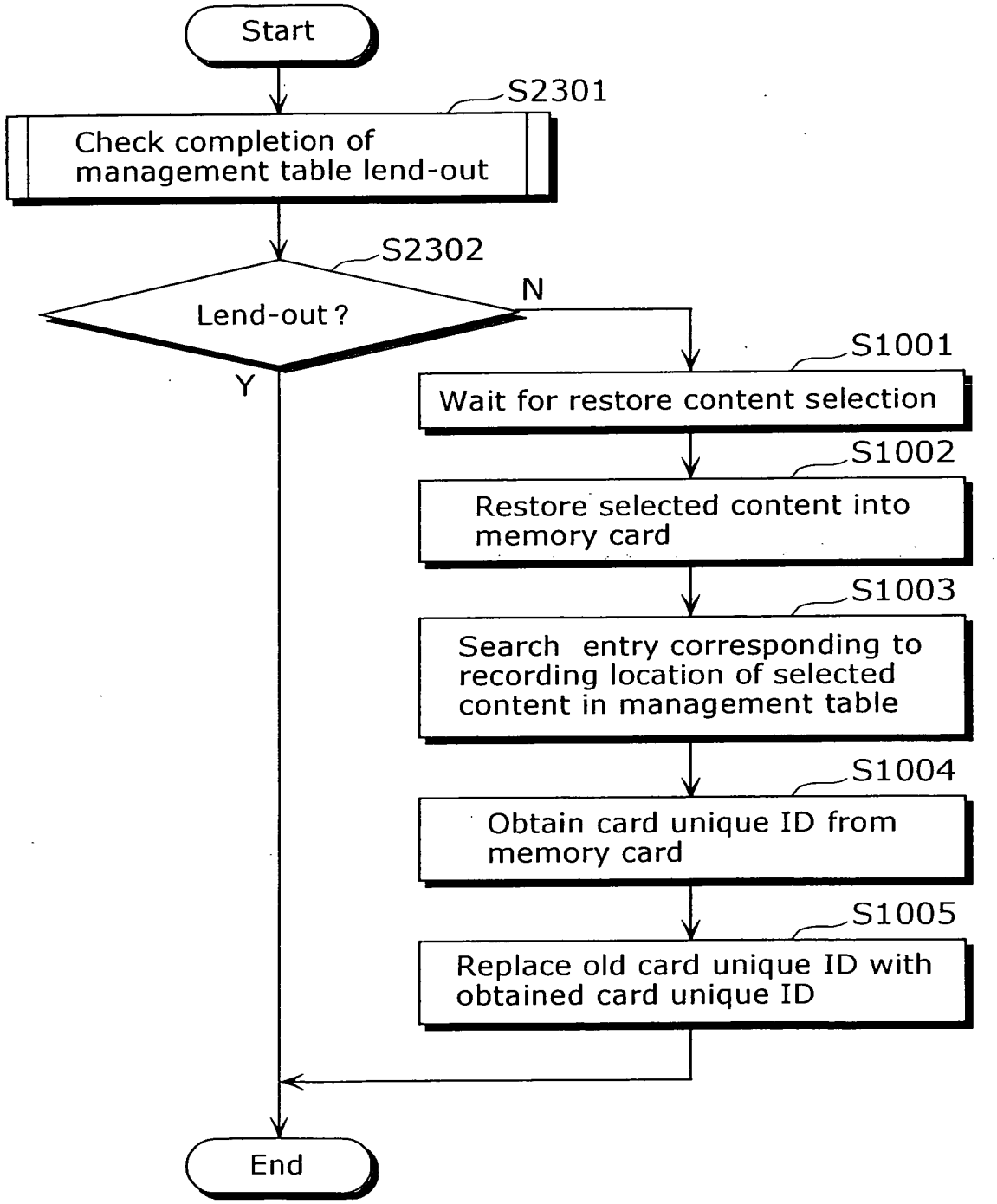

Start
S2301
Check completion of management table lend-out
S2302
Lend-out ?
N
Y
S1001
Wait for restore content selection
S1002
Restore selected content into memory card
S1003
Search entry corresponding to recording location of selected content in management table
S1004
Obtain card unique ID from memory card
S1005
Replace old card unique ID with obtained card unique ID
End

FIG. 24

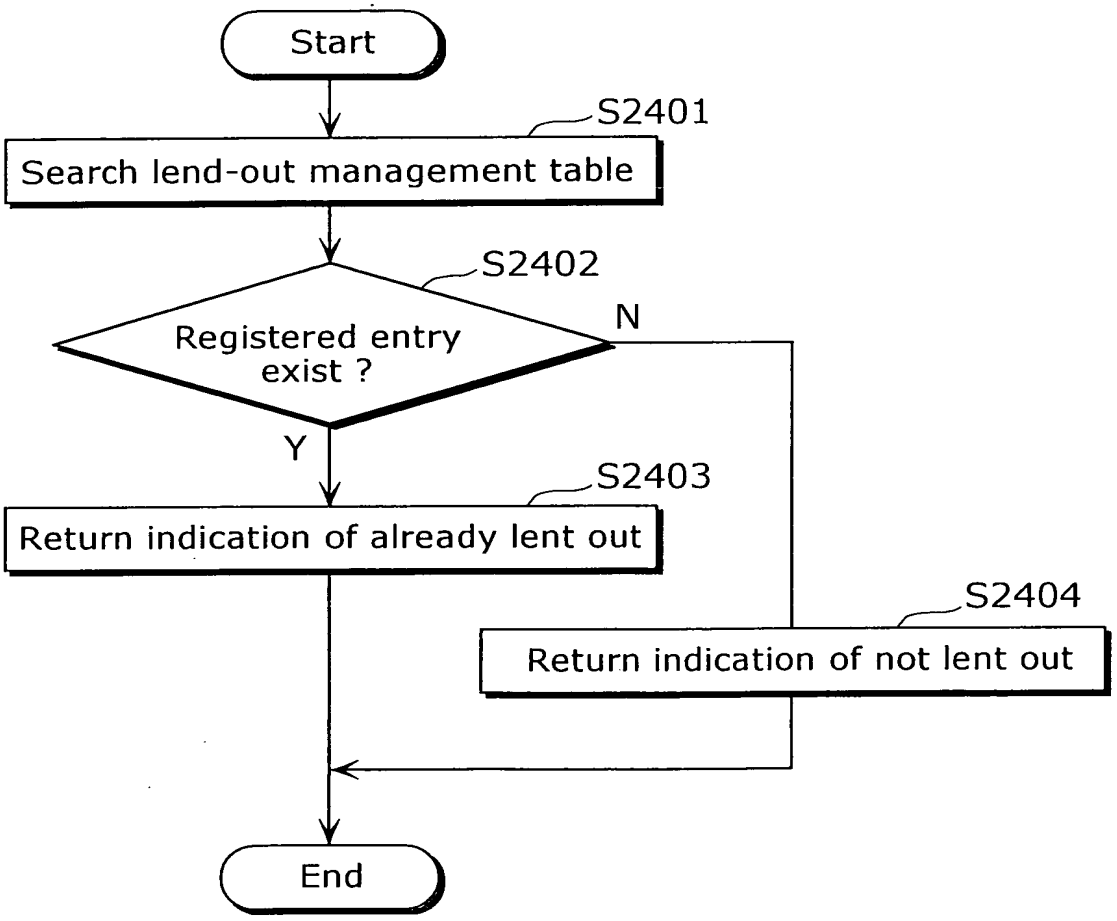

Start
S2401
Search lend-out management table
S2402
Registered entry exist ?
N
Y
S2403
Return indication of already lent out
S2404
Return indication of not lent out
End

FIG. 25

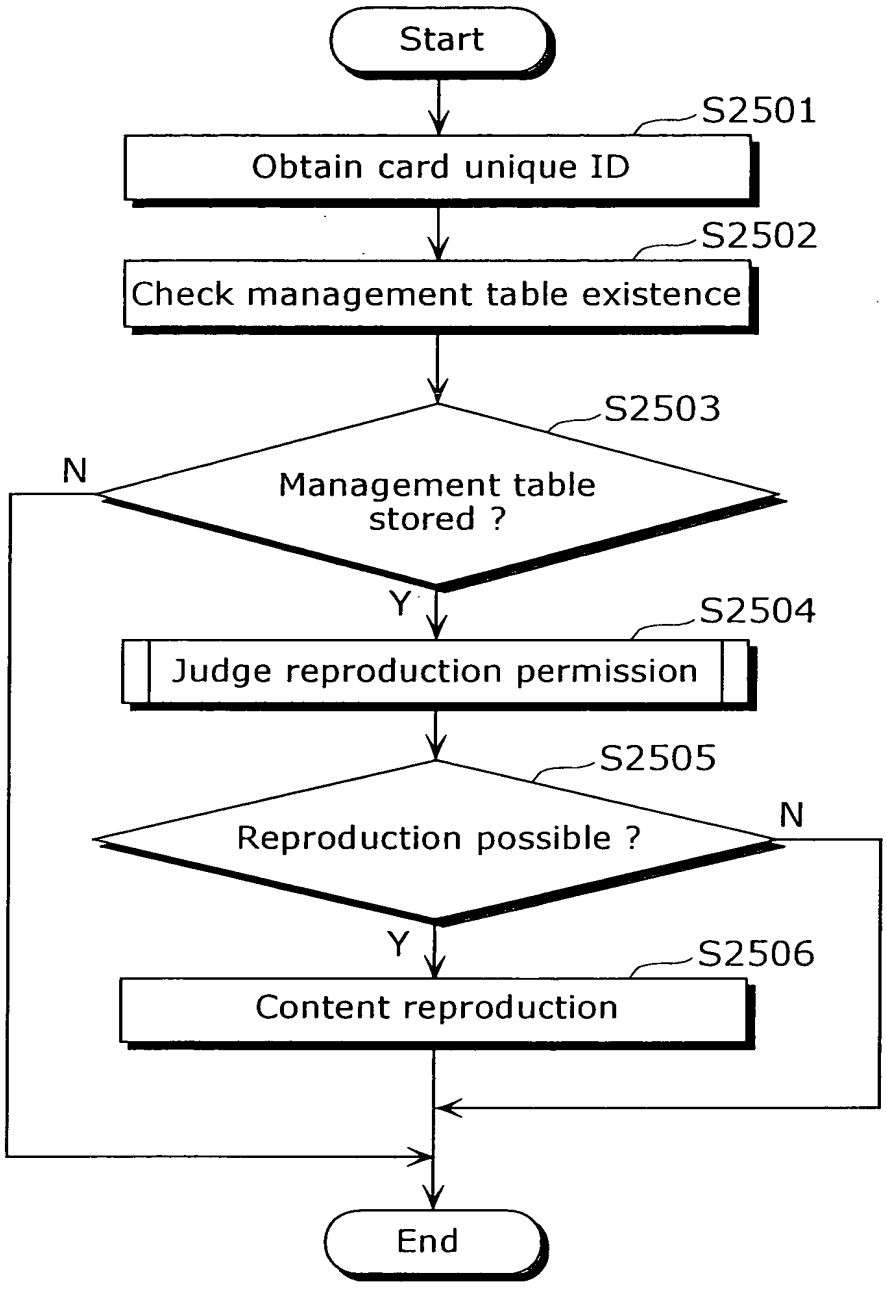

Start
S2501
Obtain card unique ID
S2502
Check management table existence
S2503
Management table stored ?
N
Y
S2504
Judge reproduction permission
S2505
Reproduction possible ?
N
Y
S2506
Content reproduction
End

FIG. 26

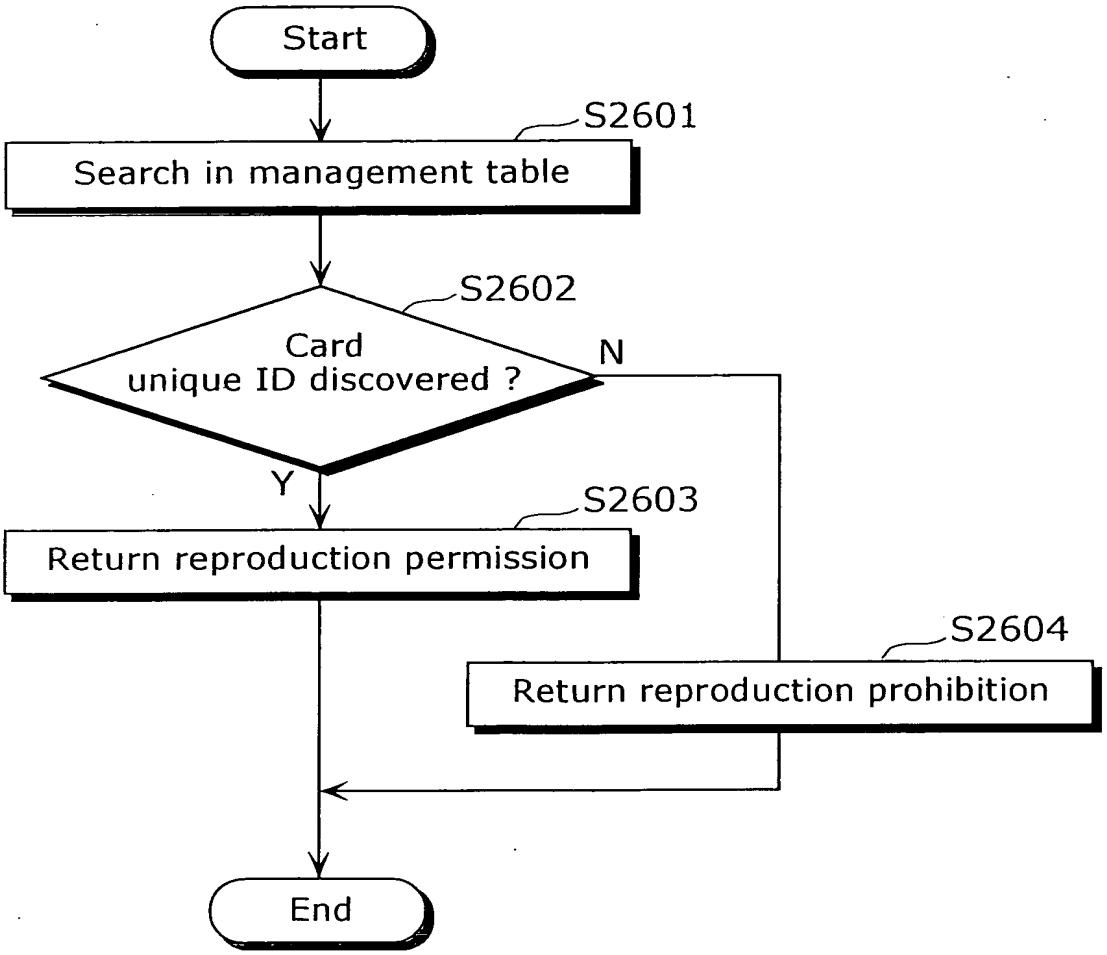

Start
S2601
Search in management table
S2602
Card
unique ID discovered ?
N
Y
S2603
Return reproduction permission
S2604
Return reproduction prohibition
End

FIG. 27

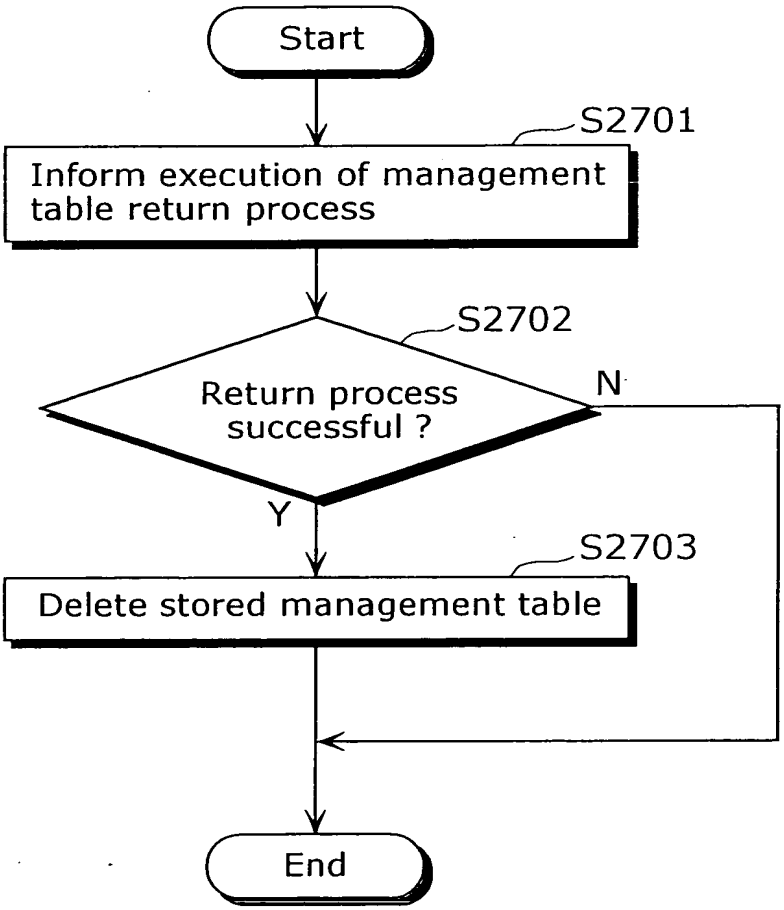

Start
S2701
Inform execution of management table return process
S2702
Return process successful ?
N
Y
S2703
Delete stored management table
End

FIG. 28

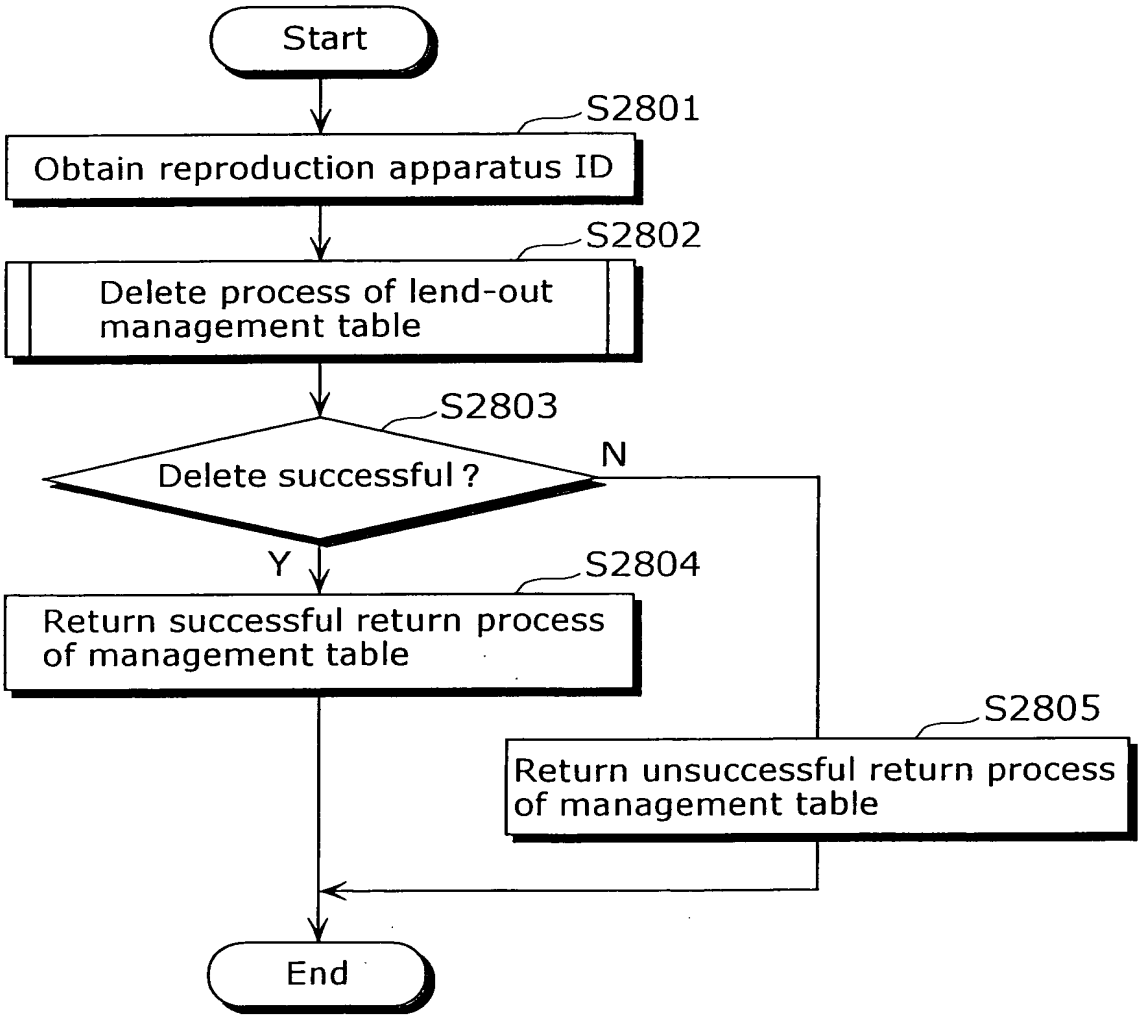

Start
S2801
Obtain reproduction apparatus ID
S2802
Delete process of lend-out management table
S2803
Delete successful ?
N
Y
S2804
Return successful return process of management table
S2805
Return unsuccessful return process of management table
End

FIG. 29

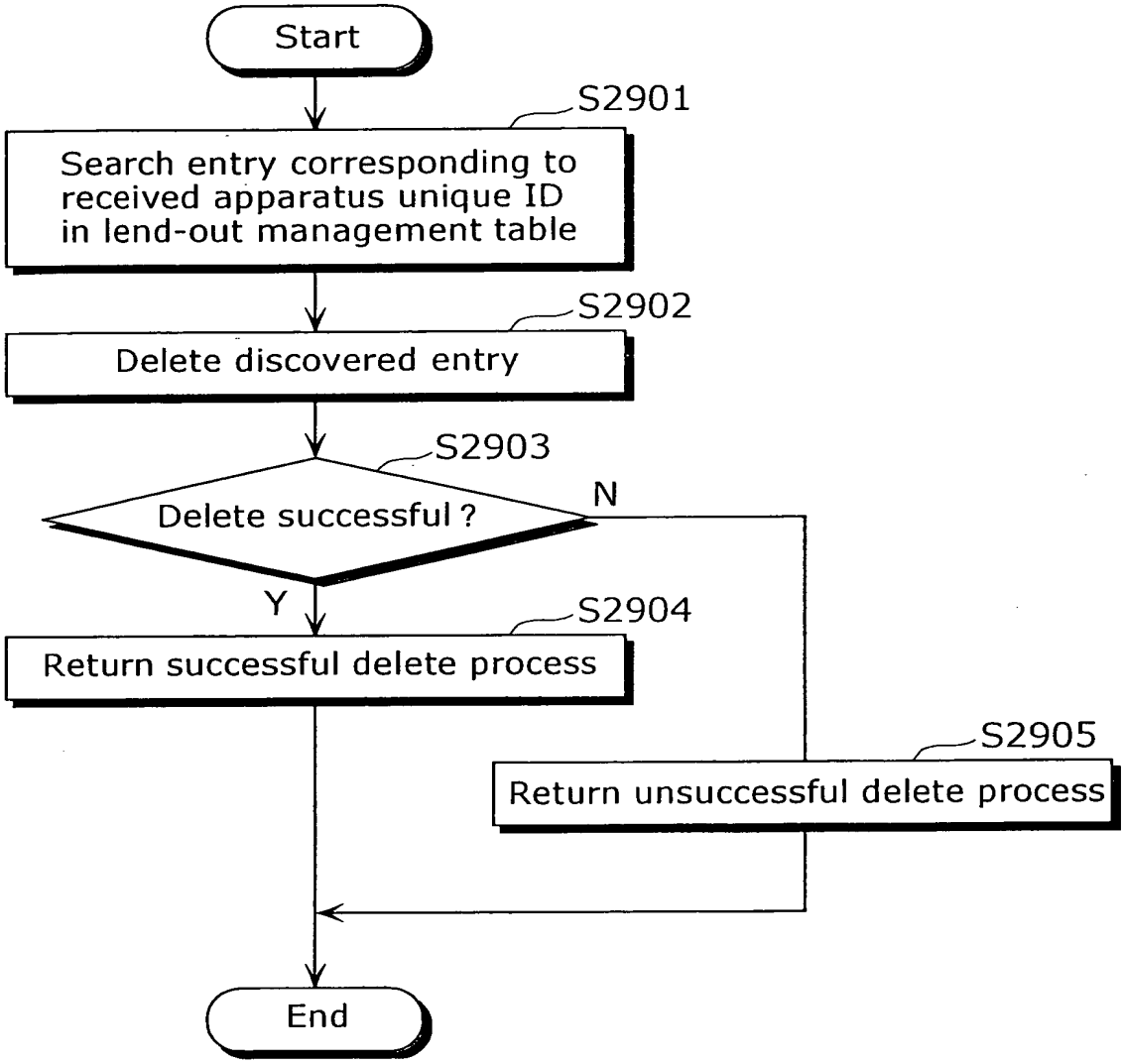

Start
S2901
Search entry corresponding to received apparatus unique ID in lend-out management table
S2902
Delete discovered entry
S2903
Delete successful ?
N
Y
S2904
Return successful delete process
S2905
Return unsuccessful delete process
End

FIG. 30

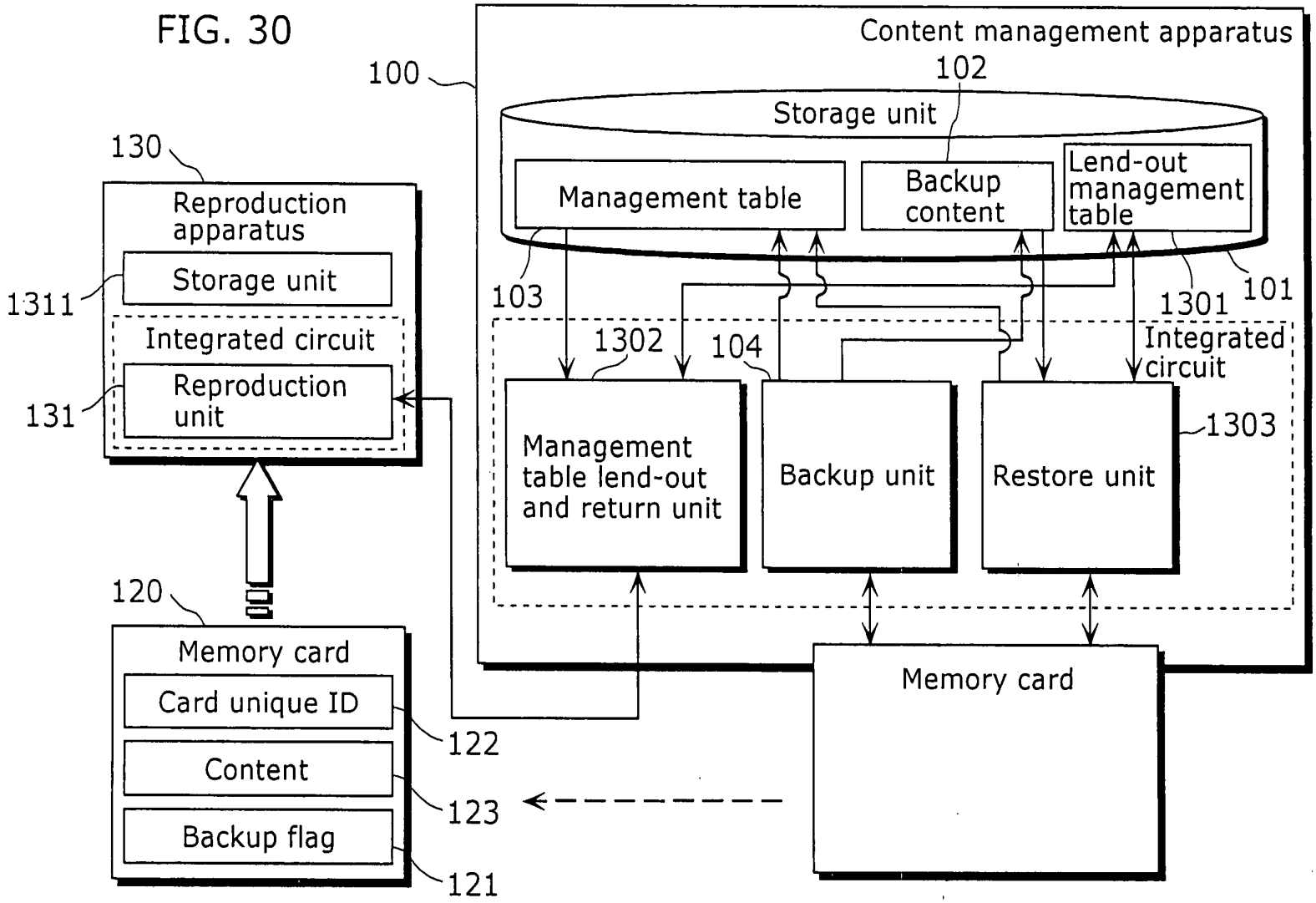

Content management apparatus
100
102
Storage unit
Management table
Backup content
Lend-out management table
103
1301
101
1302
104
Integrated circuit
1303
Management table lend-out and return unit
Backup unit
Restore unit
130
Reproduction apparatus
Storage unit
1311
Integrated circuit
Reproduction unit
131
120
Memory card
Card unique ID
122
Content
123
Backup flag
121
Memory card

FIG. 31

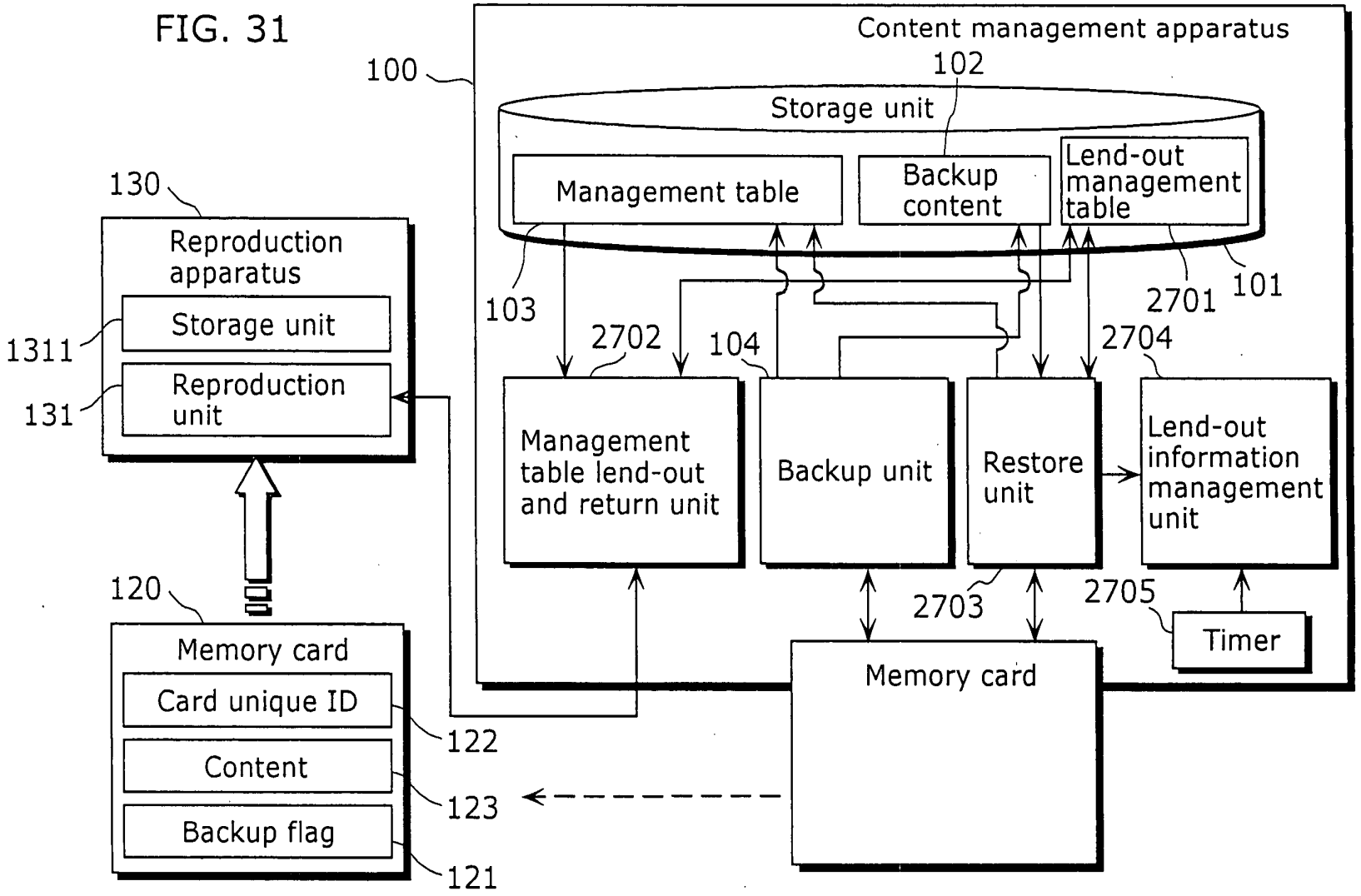

Content management apparatus
100
102
Storage unit
Management table
Backup content
Lend-out management table
130
Reproduction apparatus
Storage unit
1311
Reproduction unit
131
103
2702
104
2701
101
2704
Management table lend-out and return unit
Backup unit
Restore unit
Lend-out information management unit
120
Memory card
Card unique ID
Content
Backup flag
122
123
121
2703
2705
Timer
Memory card

FIG. 32

3200

Apparatus unique ID (8 bytes)	Lend-out expiration time (128 bytes)
1234	200312241200
2468	200307141745
...	...
9731	200406200830

3201

FIG. 33

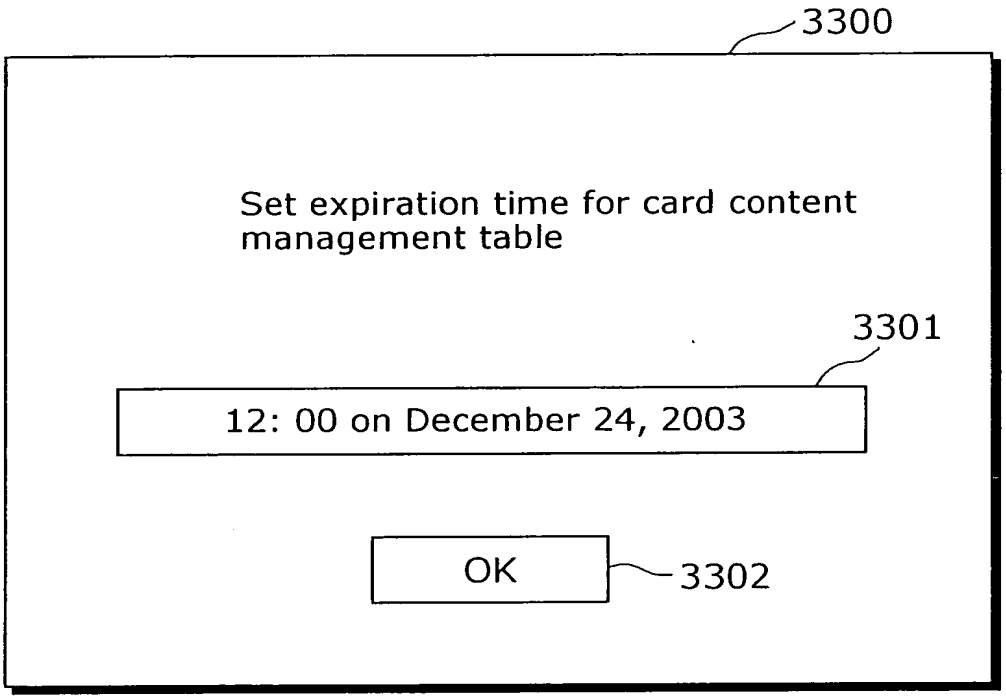


FIG. 34

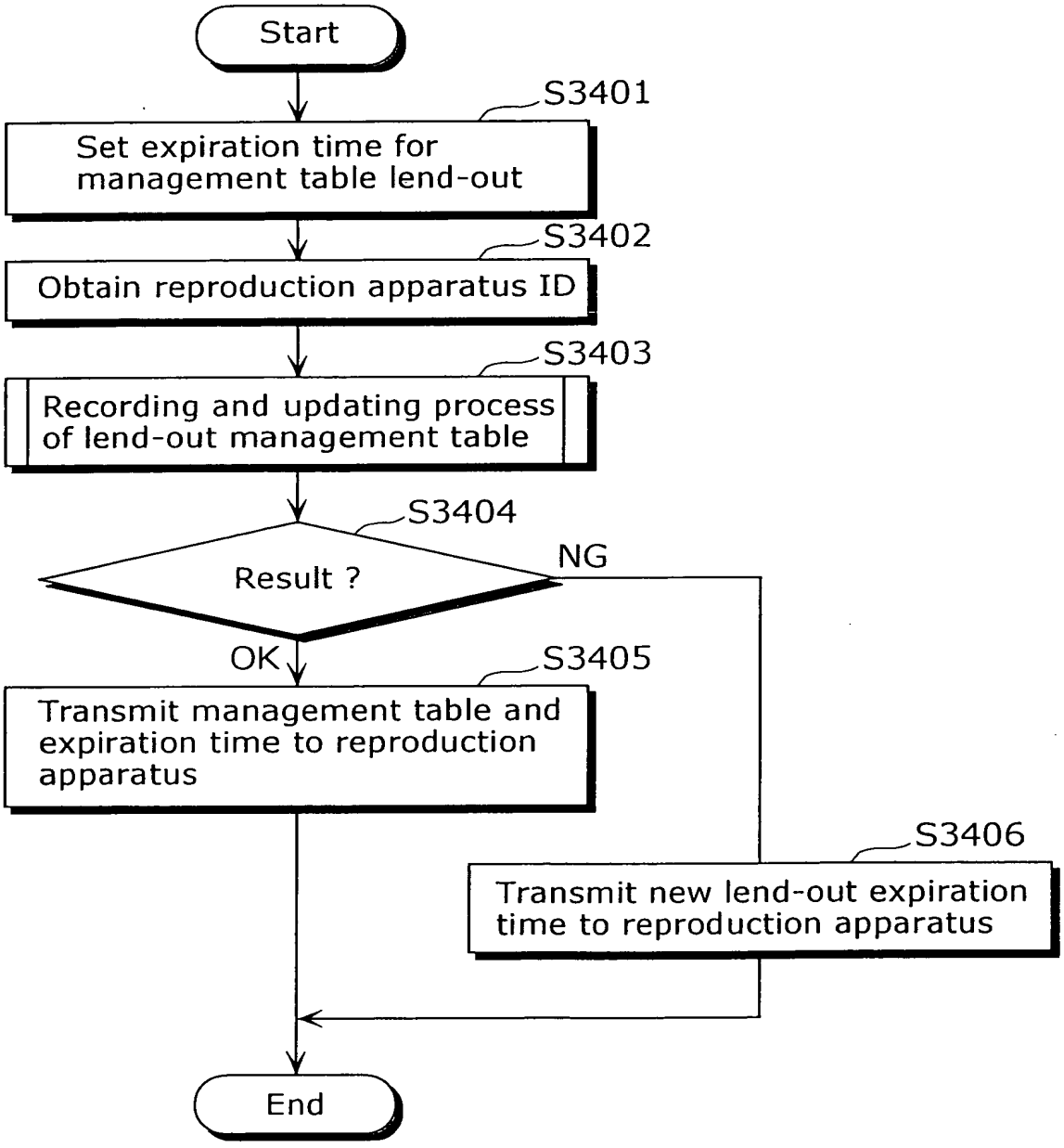

Start
S3401
Set expiration time for management table lend-out
S3402
Obtain reproduction apparatus ID
S3403
Recording and updating process of lend-out management table
S3404
Result ?
NG
OK
S3405
Transmit management table and expiration time to reproduction apparatus
S3406
Transmit new lend-out expiration time to reproduction apparatus
End

FIG. 35

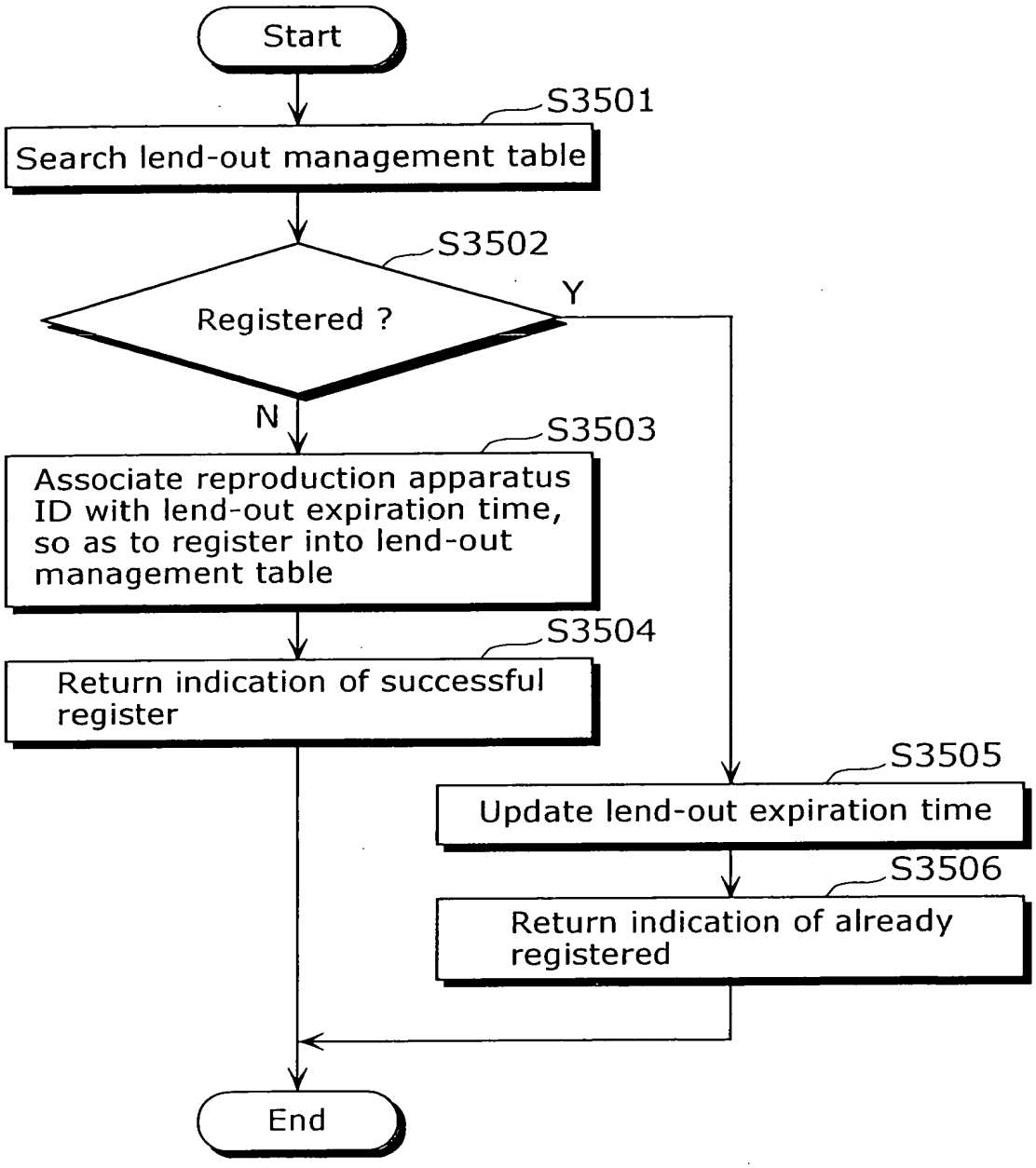

Start
S3501
Search lend-out management table
S3502
Registered ?
Y
N
S3503
Associate reproduction apparatus ID with lend-out expiration time, so as to register into lend-out management table
S3504
Return indication of successful register
S3505
Update lend-out expiration time
S3506
Return indication of already registered
End

FIG. 36

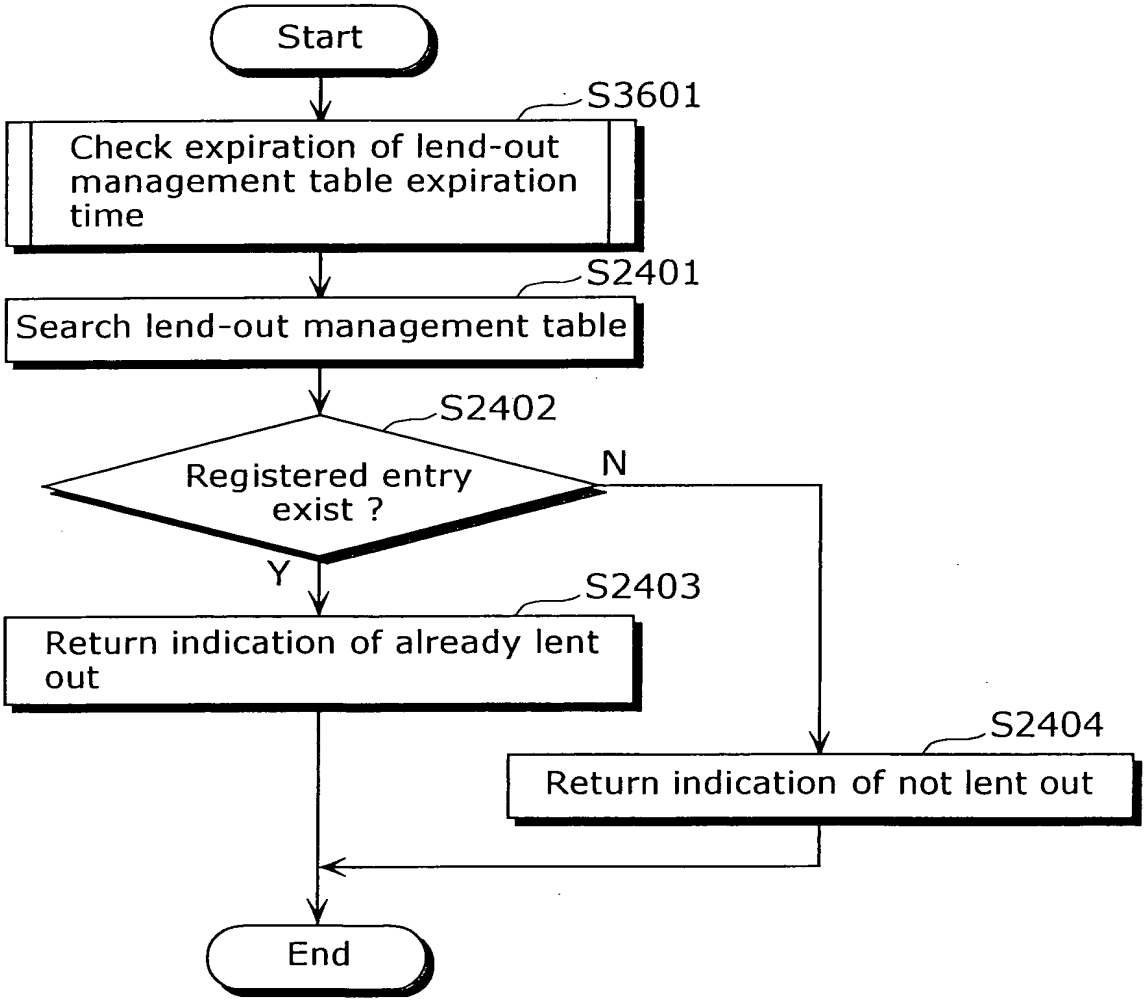

Start
S3601
Check expiration of lend-out management table expiration time
S2401
Search lend-out management table
S2402
Registered entry exist ?
N
Y
S2403
Return indication of already lent out
S2404
Return indication of not lent out
End

FIG. 37

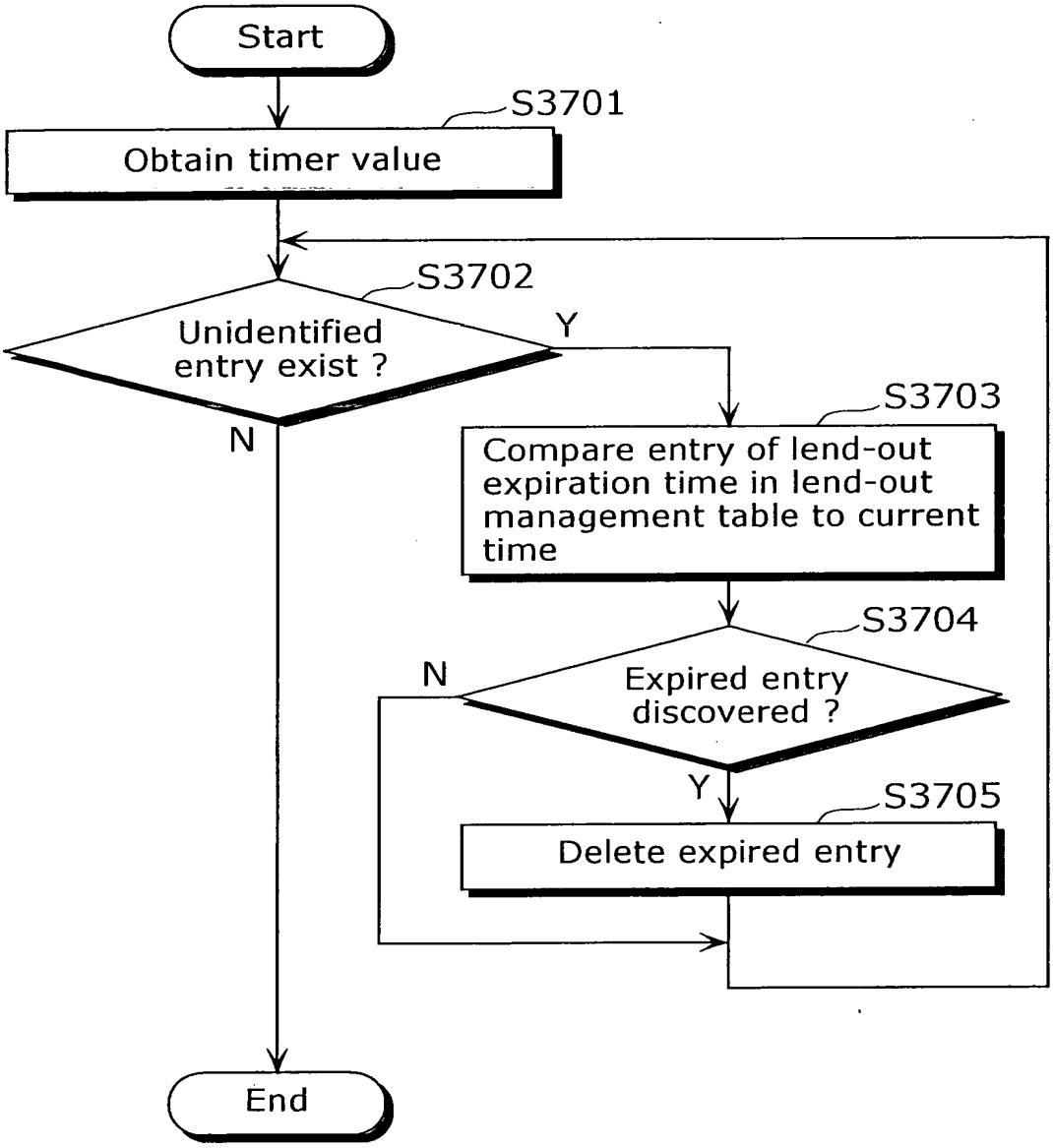

Start
S3701
Obtain timer value
S3702
Unidentified entry exist ?
Y
N
S3703
Compare entry of lend-out expiration time in lend-out management table to current time
S3704
Expired entry discovered ?
N
Y
S3705
Delete expired entry
End

FIG. 38

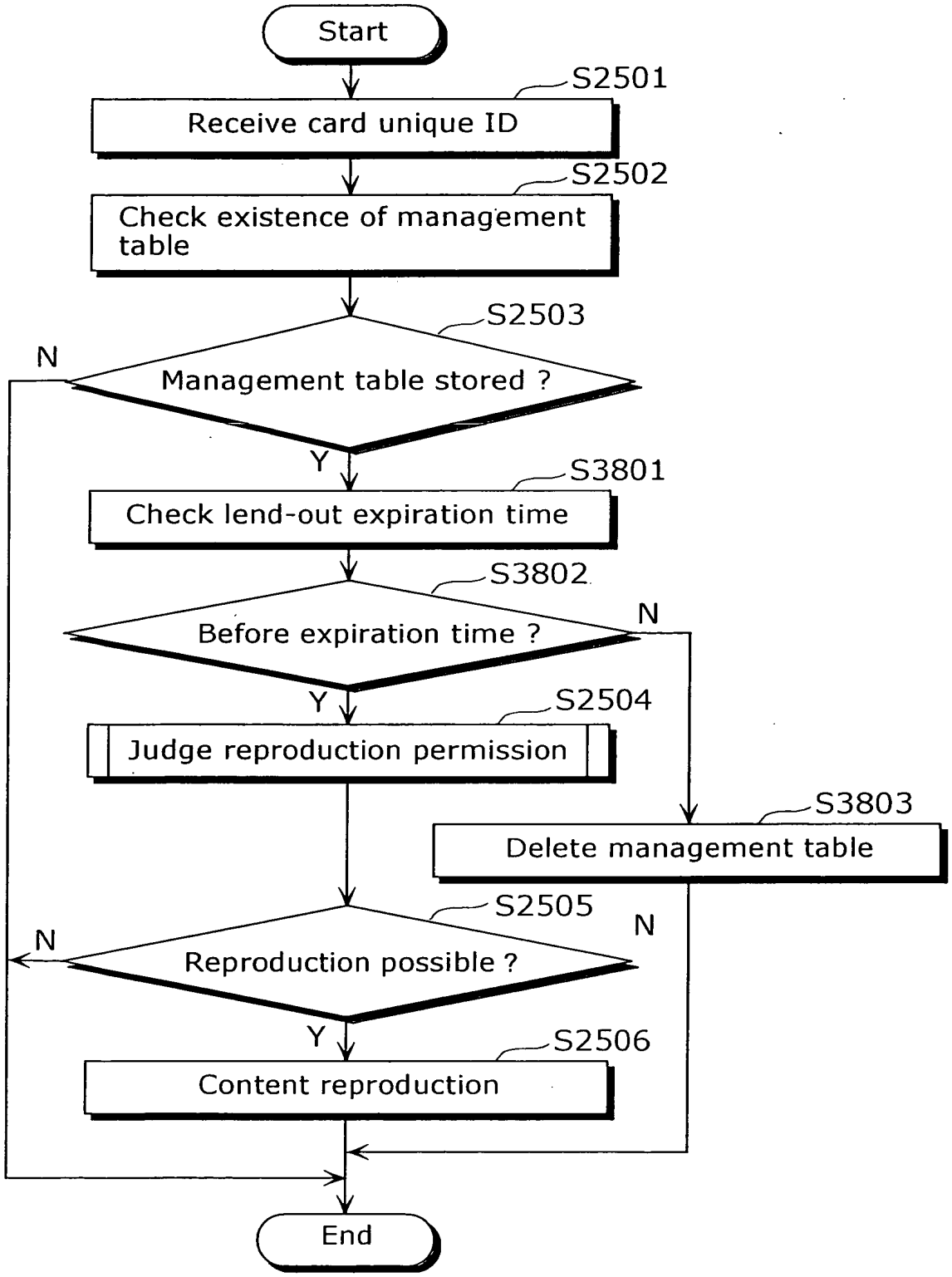
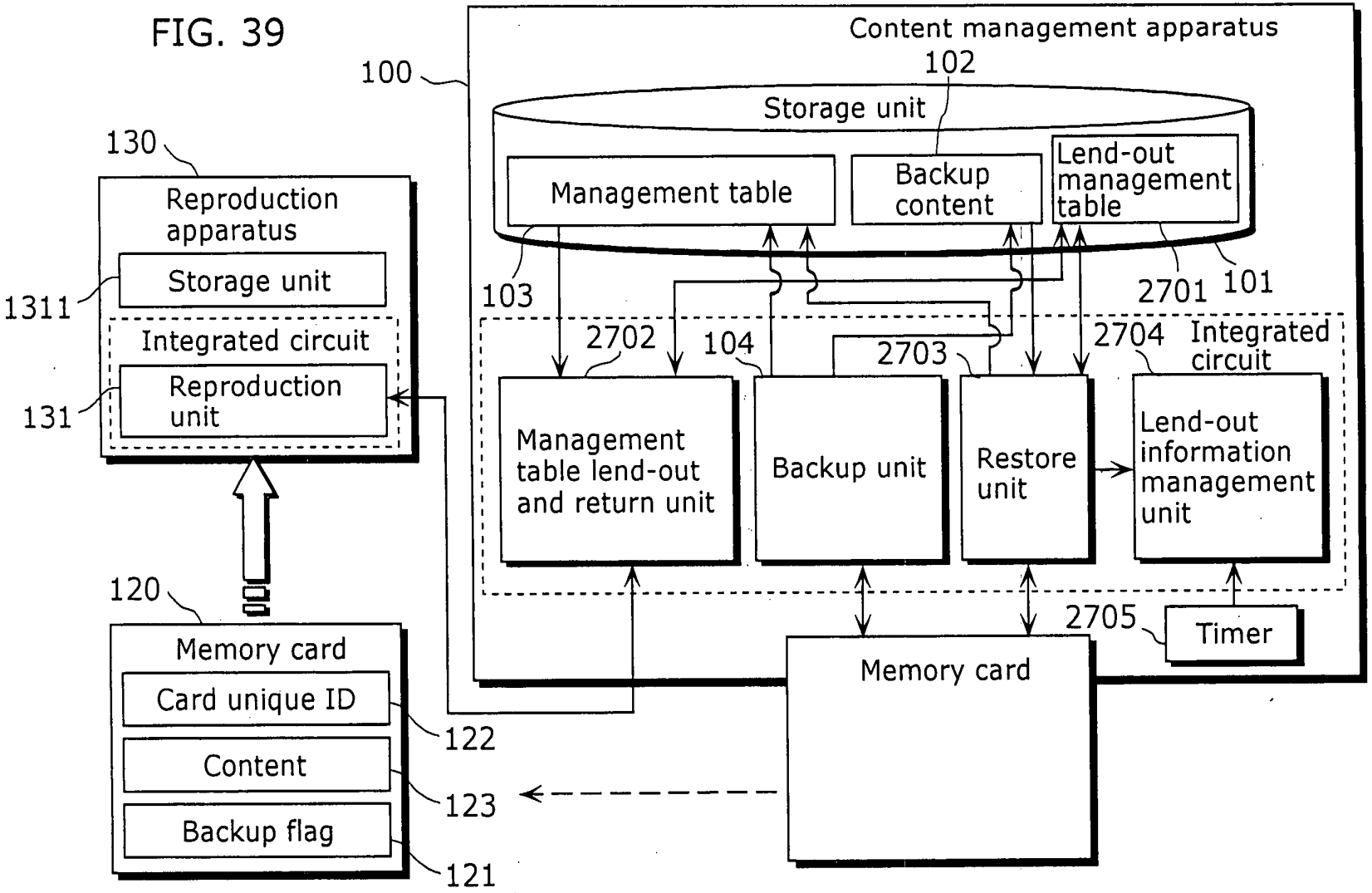

Start
S2501
Receive card unique ID
S2502
Check existence of management table
S2503
Management table stored ?
N
Y
S3801
Check lend-out expiration time
S3802
Before expiration time ?
N
Y
S2504
Judge reproduction permission
S3803
Delete management table
S2505
Reproduction possible ?
N
N
Y
S2506
Content reproduction
End

FIG. 39


Content management apparatus
100
102
Storage unit
Management table
Backup content
Lend-out management table
103
2701
101
130
Reproduction apparatus
Storage unit
1311
Integrated circuit
Reproduction unit
131
2702
104
2703
2704
Integrated circuit
Management table lend-out and return unit
Backup unit
Restore unit
Lend-out information management unit
2705
Timer
Memory card
120
Memory card
Card unique ID
122
Content
123
Backup flag
121